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LINNÆUS AS A PHYSICIAN.*

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INTRODUCTION.

Among physician-scientists who achieved their greatest renown in some department of learning other than medicine Carl von Linné, better known as Carolus Linnæus, must be placed in the front rank. This great naturalist made for himself a permanent name in medicine also, but the extent and significance of his work and interest in medicine seem to have been more or less overshadowed by the fundamental importance of his work in natural science, especially botany.

The principal sources of the information in this article have been Richard Pulteney's excellent work on the writings of Linnæus,† in which the medical writings also are fully considered, and Hjelt's special work concerning Linnæus as a physician,‡ based upon personal study of the writings and correspondence of Linnæus and of the records in the archives of the University of Upsala. Both these books appear to give altogether thorough and sympathetic reviews of Linnæus' medical activity in its various aspects as teacher, investigator and writer.

OUTLINE OF THE CAREER OF LINNÆUS.

Born in 1707, Carl von Linné was destined by his father for holy orders, but showed such distaste for scholastic studies and such desires to ramble in search of plants and flowers that his father was urged to apprentice him to a tailor or shoemaker. Through the kind efforts of a physician Linnæus was encouraged in his study of plants and of physiology, and eventually admitted to the University of Lund with a testimonial of the following dubious import: "Youth at school might be compared to shrubs in a garden which may disappoint the gardener, but if transplanted into different soil they may prosper." It was hoped that in the university the conditions might be more propitious for his progress.

As a student Linnæus assisted in private practice. At that time there was no real clinical instruction in Sweden, and it was customary for the young men to work under preceptors ("freqventera sjukstugan och lära av den svidandes egna mun"). When Linnæus came to Upsala in 1729 the medical faculty consisted of two professors and one adjunct. One professor taught pathology, dietetics, surgery, pharmacy; the other physic, chemistry, anatomy, physiology and botany, each constituting by himself a whole faculty. Olaf Rudbeck, the older, celebrated for his discoveries in the lymphatic system, had founded a botanic garden, but his successor, his son (1660-1740), though a good botanist, neglected botany for comparative philology and antiquarianism. In 1730 Linnæus had advanced so far in the esteem of his teachers that he was given a stipend and began to lecture on botany, with such success that intrigues were started against him and his docentship taken away. Advised by friends, Linnæus went to Harderwick, in Holland, where he obtained his degree in 1735, the title of his dissertation being "Hypothesis nova de febrium intermittentium causa." This thesis was founded principally on observations made in Sweden, where it probably was written. He sought, and after waiting eight days, gained admission to the great Boerhaave, then near the end of his illustrious career, but who helped him much in his botanical studies. At that time botany flourished in Holland, Boerhaave himself being a botanist, and Linnæus' love for botany kept him away from home and his future wife for three years longer. The work he did during this time exercised vast influence on the development of botany, being in reality the starting point of systematic botanical science.

He early became conspicuous in Holland and secured the regard of all that cultivated any branch of medical science, among them being Van Swieten and Lieberkühn. Linnæus reaped the greatest benefit from his close relationship with the illustrious Boerhaave, who showed the young Swedish scientist marked friendship and confidence. The following extract from Linnæus' diary—a curious and interesting document—describes their last meeting: "Before the time of Linnæus intending to leave Leyden, Boerhaave had been attacked with hydrops thoracis, and consequently with great difficulty of respiration; he had, therefore, given orders that no person should be admitted to see or speak to him, for he could not lie down in his bed, but was obliged constantly to sit up. Linnæus was the only person in whose favor exception was made, that he might see him and kiss the hand of his great instructor, to bid him a sorrowful adieu. The venerable invalid had still strength enough left to stretch out his hand, and (putting it to his lips and kissing it in return) to say: 'I have lived my time out, and my days are at an end. I have done everything that was in my power. May God protect thee, with whom this duty remains. What the world required of me it has got, but from thee it ex-

* Read before the Scandinavian Medical Society of Chicago, May 29, 1902.

† Richard Pultney, M.D., F.R.S., "A General View of the Writings of Linnæus." Second edition, with corrections, considerable additions, and memoir of the author by William George Maton, M.D., etc. London, 1805. With translation of Linnæus' diary.

‡ Otto E. A. Hjelt, Carl von Linné som Läkare och hans Betydelse för den medicinska Vetenskapen i Sverige. Helsingfors, 1877.

pects much more. Farewell, my dear Linnæus!" Tears prevented him from saying more, and, on Linnæus' return to his lodgings, he sent him an elegant copy of his Chemistry." And surely Linnæus may be placed by the side of Haller, Van Swieten, De Haen and others as a worthy pupil of a great master.

Greatly honored throughout Europe for his work in botany, so that Sauvages wrote, "the whole botanical world obeys you forever," and having received flattering offers to remain in Holland, and also from Oxford and Paris, Linnæus, in 1738, returned to Sweden and settled in Stockholm, where, after a desolate period of waiting for patients, he achieved his first success through treatment of gonorrhea. Always afterward he showed much interest in the treatment of gonorrhea and syphilis. He became naval physician and utilized his opportunities to study diseases and the actions of drugs. He also secured permission to make postmortems, heretofore but rarely granted, and Hjelt states that from this time the interest in pathologic anatomy increased in Sweden. In 1739 he married the choice of his heart after an engagement of several years; his practice increased rapidly, but he felt himself irresistibly drawn toward botany and natural science. He was offered a professorship in Göttingen, but in May, 1741, he received appointment as professor in Upsala in spite of a hot fight against him; the following year an adjustment with his colleague, Rosén, gave Linnæus botany and the botanical gardens, and for the succeeding thirty-six years the great botanist was continuously interested more or less in medical problems.

Thenceforward his life was a continuous course of prosperity. He was greatly honored. Botany occupied his special attention in spring and summer; in the autumn and winter months he gave the more purely medical lectures. He gathered about him a larger circle of students and listeners than any one either before or after him has done; the number of students in the university rose from five hundred to fifteen hundred, and he "shifted the scientific center of gravity to a small town in Sweden." Students flocked to hear him from Finland, Norway, Denmark, Germany, Russia, England, and even from America. Adam Kuhn of Philadelphia spent the years 1763-1765 in Upsala as student under Linnæus, who regarded him with special favor. Kuhn, in 1768, became the professor of materia medica and botany in the College of Philadelphia, where he gave lectures on materia medica for twenty-one years. When the College of Philadelphia, in 1791, united with the University of the State of Pennsylvania to form the University of Pennsylvania, Dr. Kuhn became professor of theory and practice of medicine, continuing as such for six years.

As a general result of Linnæus' influence, the study of the natural sciences received a mighty stimulus in the universities where logical disputations and metaphysical speculations too long had prevailed to the exclusion of science. The culture of natural science in Sweden was carried to a higher standard than elsewhere in Europe, but his pupils rapidly extended the doctrines and celebrity of their master, and before long numerous public institutions were established elsewhere also for the express cultivation of natural sciences. Linnæus emphasized eloquently the relations and importance of the study of natural history to the welfare of the people, and was ever striving to enlist the interests of the great in behalf of this study and to draw the youth of the land into its paths. In this respect there is great similarity between Linnæus and Pasteur; for Pasteur was irresistibly drawn toward scientific problems connected with industries of large economic importance. Linnæus found special delight in the study of natural science, which he regarded as "one of the richest and most permanent sources of pleasure which the kindness of providence has opened to the human mind." In his labor to arrange anew the history of the productions of nature "he found biology a chaos and left it a cosmos."

LINNÆUS' RELATIONS TO MEDICINE IN GENERAL.

Linnæus was deeply interested in the development of medicine in all its phases. He urged its establishment upon a rational basis of theory and observation. Exact observations of nature and logical grouping of the results are essential for progress, philosophical theory being the key to the explanation of practical observations, which in turn test the theory. While empirical medicine employs curative methods, the mode of action of which it can not explain, rational medicine endeavors to discover the laws, mechanical and otherwise, that govern structure and function, and to re-establish the conditions that are disturbed by disease. Weak hypotheses and prejudiced notions retard medicine as well as other sciences; if medicine is to develop, it, like other sciences, must employ experimental methods. He recognized and expressed clearly that rational medicine to a large extent is the result of co-ordination of anatomic, physiologic, botanic, chemical and mechanical truths. Hospitals and botanic gardens are necessary for the study of the nature and treatment of diseases. In fatal cases the internal organs should be examined in the end that the causes of disease may be understood and perhaps prevented or modified. He suggests that in many diseases the arrest of increased activity of the morbific cause may be all that can be attained.

Linnæus' interest in the methods of medical education proved of great importance to the study of medicine in Sweden. The course of instruction in the University of Upsala was modified and improved; the requirements for final examinations were raised and their character materially improved. Practical and public examinations in the hospital were introduced. Linnæus' lectures were characterized by clearness, conciseness, ingenuity of classification and direct bearing on practice, and the attendance became very large. Botany was not permitted to crowd out his interest in practical medicine in the widest sense. He wrote popular articles of medical nature, furnished material for almanacs and did much to disseminate useful advice and information. He aided veterinary medicine and helped it to secure recognition in his country. His writings in regard to alcohol unquestionably had some influence in checking the abuse of this substance. It was Linnæus' greatest pleasure to teach the results of his observations and to spread knowledge broadcast. Instruction was his most enjoyable occupation, and he regarded the creation of desire for and pleasure in study as the most important duty of university teachers. He did not hesitate to become the popular exponent of scientific observations, and as such we know he was instructive and inspiring.

THE MEDICAL PHILOSOPHY OF LINNÆUS AND HIS PRINCIPAL MEDICAL WRITINGS.

An interesting phase of Linnæus' work is the extensive correspondence he carried on with learned men and other persons all over the world. Perhaps the most noteworthy correspondence is that with François Boissier de la Croix Sauvages (1706-1767), professor in the

medical school of Montpellier; between these two there was carried on a constant and frequent epistolatory exchange of ideas and observations without personal acquaintance. After Boerhaave, Sauvages undoubtedly exercised the greatest influence upon Linnæus' relation to and interest in medicine. Sauvages in 1731 published a work entitled "Nouvelles Classes des Maladies," which became Linnæus' guide in his lectures on nosology. In this work Sauvages, who also had a first love for botany, made the first attempt to arrange diseases into classes and species as recommended by Sydenham and Baglivi for medicine. The system and order in Sauvages' work at once appealed to Linnæus, in whom arrangement was a passion and classification a delight. Later, when Sauvages in 1760 published his great work entitled "Nosologia methodica sistens morborum classes juxta Sydenhami mentem et botanicorum ordinem," Linnæus at once introduced it as a text-book for his students. And Linnæus follows Sauvages closely* in his own work on "Genera Morborum" (1763), in which the diseases are classified into orders, classes and species. The system is largely symptomatologic. Acute inflammations are referred to fevers and divided into membranous and parenchymatous. Especially the group of Morbi dolorosi contains many single symptoms listed as distinct diseases. The group of Deformes and Vitia which comprise cutaneous affections and tumors, etc., represent definite anatomic forms. Naturally the system corresponds closely with the views prevalent among medical men at that time. There was then no real knowledge of the finer structure of the human body, the relation of diseases to anatomic changes were not understood thoroughly, symptomatology was the phase most actively investigated, and a large fund of therapeutic experience had been gathered. Morgagni's fundamental work in special pathologic anatomy, "De sedibus et causis morborum," did not appear until 1762. While Linnæus clearly recognized the importance of pathologic anatomy—he himself made postmortems while in Stockholm, and he subsequently urged their importance—yet his notions of general pathology were governed largely by his views concerning the action and nature of drugs.

MORBI.

- Febriles (e sanguine in medullam)
  - Exantematici.
  - Critici.
  - Phlogistici.
- Temperati
  - Nervini
    - Sensationis: Dolorosi.
    - Judicii: Mentales.
    - Motus
      - Quietales.
      - Motorii.
  - Fluidi
    - Secretionis
      - Suppressorii.
      - Evacuatorii.
  - Solidi
    - Interni: Deformes.
    - Externi: Vitia.

Exanthematicii	Febris cum efflorescentia cutis maculata.
Critici	Febris cum urinae hypostasi lateritia.
Phlogistici	Febris cum pulsu duro, dolore topico.
Dolorosi	Doloris sensatio.
Mentales	Judicii aberratio.
Quietales	Motus involuntarius.
Motorii	Motus abolitio.
Suppressorii	Meatum impeditio.
Evacuatorii	Fluidorum evacuatio.
Deformes	Solidorum facies mutata.
Vitia	Externa palpabilia.

Linnæus' philosophy of disease is based on the fundamental conception that the human body consists of cortical and medullary (nervous) substances; it is like a woven cloth of double threads, the nerves constituting the warp and enclosing various fibers and fluids, the weft. The medullary substance is of maternal origin and it is the first formed. Further, it is the seat of feeling and motion and the fluid and solid parts arise under its influence. The medullary part in turn is nourished by the finest materials in the cortical parts and by electricity taken in through the lungs from the air. Now, it is disturbance in the normal relations of these parts that cause disease. In fevers, for instance, the fluid cortical part is profoundly altered by acidifying (ab acido seri sanguinis) or decomposing substances that enter the body (a putrido cruoris sanguinis), the fever being critical in the first place and phlogistic in the second. Exanthematous fevers, on the other hand, perhaps depend on living contagium (ab exanthematibus vivis contagiosis). Every inflammation is accompanied by pain because the fibers are stretched to the point of breaking. In order to cure disease the condition of the fluid or solid parts must be changed to the opposite of that under which disease developed. Now, the power of medicines to produce such alterations may be recognized by their taste and smell, and the most important are obtained from plants of opposite smell and taste (sapida and olida). This theory of contraries is the leading thought of all of Linnæus' medical writings, and it constitutes the basis for his classification of materia medica. As seen from the subjacent table, he conceived that there were five kinds of taste and smell, each with its contrary, corresponding to five different pathologic conditions in the two constituent parts of the body. "Linné was the first who saw that nature is balanced by contraries, and acted upon numero quinario." He held smell to be due to motion in the nerves. The idea that the nervous system is distinct and separate from the rest of the body seems to have become necessary in order to arrange medicines in certain large groups because the odoriferous and volatile substances appeared to act directly upon the brain and nerves.

I. SAPIDA.

Agunt in corticale vitale:	In Fluida.	In Solida.	
1. Aquosa	Mundificantia.	Humectantia.	
2. Acida	Absorbentia.	Exsiccantia.	Sicca.
	Rifrigerantia.	Attenuantia.	
3. Dulcia	Balsamica.	Tonica.	Amara.
	Edulcorantia.	Impinguntia.	
	Incidentia.	Corrodentia.	Acria.
4. Viscosa	Inviscantia.	Lubricantia.	
	Penetrantia.	Abstergentia.	Salsa.
5. Pinguia	Obtundentia.	Emollientia.	
	Inspissantia.	Adstringentia.	Stiptica.

II. OLIDA.

Agunt in medullare animatum:				
Sensum	Excitant	Aromatica	Sopiunt	Virosa
Motum	Spasticant	Argastica	Evacuant	Nauseosa
Judicium	Acuunt	Spirituosa	Confundunt	Tetra
Libidinem	Provocant	Ambrosiaca	Suffocant	Alcina

Linnæus' pathology appears to be a compromise between the iatrochemic school—which taught that health depended upon the proper chemical relations of the fluids of the body—and iatromechanic or iatromathematic school—which explained disease according to the laws of mechanics and mathematics applied to the human body. While distinctly influenced by Boerhaave's fibrillar pathology, which sought explanations for disease in the tension and relaxation of fibers (fibrum strictum et laxum), which are constituent parts of the body, Linnæus carried this idea much further into details and sought also for corresponding conditions in the fluids. Accordingly, the fibers may be not merely tense or lax, but (a) moist, dry; (b) friable, tough; (c) fat, slender; (d) thick, thin; (e) flexible, stiff. As more or less corresponding conditions in the humors, including the blood, which are the real sources of solid fibers, he enumerates: (a) thin, thick; (b) acid, phlogistic; (c) oily, acrid; (d) plethoric, de-

* Linnæus has 11 classes, 37 orders, 325 species. Sauvages, 10 classes, 44 orders, 314 species.

ficient; (e) glutinous, muriatic. The inter-relations between the fibers and the fluids are well expressed in the following sentence: "Qualis chylus, talis sanguis, qualis sanguis, tales fibræ, quales fibræ, tales oriuntur morbi." A fundamental idea seems to have been that equilibrium in nature depends on a constant struggle between opposites. "The human body may be considered as a balance, and when it equilibrates we feel well, but so soon as any overweight appears on either side, then we are sick." His principle of "contrariorum e contrarius curatio" is a further therapeutic application of this theory.

Materia medica was Linnæus' favorite branch in medicine. This naturally was due to the close relationship between pharmacology and botany. In those days botanists generally made incursions into medicine, and it undoubtedly was a source of much satisfaction to Linnæus that he could blend with his teaching of botany the practical part arising out of it, namely, materia medica. We know that he strove hard to introduce indigenous drugs into materia medica and to establish the cultivation of medicinal and other useful plants. He published a highly estimated Materia Medica (1749), which appeared in several editions in Germany. This work is regarded as his most important. The great A. von Haller calls it "commodissimum praelectionibus compendium, inter optima auctoris," and Gronovius and Royen added their compliments. For a long time it remained as a model for other authors. The pharmaceutical plants were arranged according to his botanical system and a careful description given of those drugs used in medicine with a brief statement of their therapeutic value. He endeavored to include only useful drugs and warned strongly against complex formulæ. The empirical classification was abandoned in favor of one based on the general theory that "sapida in fibras, olida in nervos agunt." The chief merit of the work is that by bringing some degree of order and system into this branch he laid the foundation for the scientific study and development of materia medica. He was instrumental in introducing into medicine quassia, solanum, dulcamara, and many other substances. Hjelt lays much stress upon Linnæus' effort to establish the nature of poisons which, he urged, give us the best medicines if rightly used.

Another noteworthy book is his "Clavis Medicinæ," which contains his fundamental pathologico-therapeutic theories in the most concentrated form. Perhaps this is the most remarkable of all his works because it is a definite attempt to construct a comprehensive medical doctrine upon the basis of certain theoretical conceptions. It certainly is a striking example of Linnæus' ability to co-ordinate and arrange scientific facts of various kinds under one leading idea. Couched in a more or less aphoristic language, it makes rather difficult reading. It is dedicated to Sigfr. Albinus, Anatomico summo, Alb. von Haller, Physiologico summo, Gerardo Van Swieten, Observatori summo, Franc. de Sauvages, Pathologo summo, Nicol v. Rosenstein, Therapeutico summo.

LINNÆUS' DIETETICS AND HYGIENE.

Linnæus was interested especially in dietetics and hygiene, and his lectures upon this topic were largely attended, and served to create marked professional and popular interest in hygiene, which thus got an early start in Sweden. He mentions six principal requisites for natural life, namely, fresh air, bodily movement, sleep, food, excretions and affections. He attributes hysteria and other morbid conditions among the rich to sedentary life. He explains the effects of air, exercise, etc., according to his general pathologic principles, as is further shown in this table from his "Clavis Medicinæ."

	FLUIDA.		SOLIDA.	
1. Excreta	Densa,	Torrida.		
	Tenuia,	Humida.	Retenta	2.
3. Motio	Phlogistica,	Tenacia,		
	Acidula,	Tenera,	Qvis	4.
5. Vigiliæ	Aeria,	Macra,		
	Oleosa,	Pinguia,	Somnus	6.
7. Fames	Pauperata,	Gracilia,		
	Plethorica,	Turgida,	Cibus	8.
9. Frigus	Muriatica,	Rigida,		
	Glutinosa.	Fluxa,	Calor	10.

The application of his general pathologic and therapeutic theories to hygiene is illustrated further by the following statements: Atmosphere influences the body through heat and cold. Cold renders the fibers stiff and the fluids more salty, leading to crystallization and stone formation, while warmth relaxes the fibers and promotes the formation of glutinous material. The softer the fibers the greater the viscidity, the opposite of salty. Motion makes the fluids active, the fibers tenacious, and as the fluids are distributed the parts come closely together. Rest leads to the production of acid and renders the fibers brittle. Sleep leads to fat in the solid parts and makes the fluids oily; hunger and waking makes the fibers thin and the fluids sharp, hence the best remedy for fat is waking. Excessive evacuations render the fluids thicker and fibers dry, bodily enfeeblement and emaciation resulting, while retention renders the solid parts moist and the fluids thin.

LINNÆUS' ETIOLOGIC THEORIES.

Linnæus paid especial attention to the question of etiology of disease. He regarded the cause as of fundamental significance in determining the kind of disease in a given case. Like the old physicians, he divided causes into proximal and remote, and according to his theory the proximal cause lay in changed tension of the solid parts or in altered mixture of the fluids, while the remote causes might be found in diet, age, bodily constitution, or in contagion.

Perhaps the most remarkable of Linnæus' various medical theories is the one concerning "exanthemata viva," or that contagious diseases depend upon the entrance of small living animals into the body. This assumption he regards as fully warranted, both in analogy and experience. Of such diseases he mentions scabies, epidemic dysentery (scabies intestinorum interna), pertussis, smallpox, pest; later leprosy, phthisis pulmonum and the malarial fevers were added to this category. While the small animals Linnæus had in mind had not yet been seen or described, he saw in the manner of the spread of infectious diseases a remarkable similarity to the mode of reproduction and increase of many animals, especially insects. The smaller an animal the more numerous and rapid its progeny, hence it is not difficult to conceive that some of these minute organisms by their excessively rapid multiplication may in a short time totally fill, as it were, the whole human body. As an illustration of this fact he cites the inoculation of smallpox, in which the quantity of pus used is of no import in securing the development of good pustules. That the contagious element is destroyed by cold, but multiplies in warmth is cited as another evidence of the parasitic origin of contagious diseases. Ustilago is cited as analogous to the contagious element. The drugs that destroy insects of various kinds—musk, camphor, mercurials, sulphur, etc.—were useful also in contagious diseases.

Linnæus always felt much interest in intermittent fever, which was endemic about Upsala at the time of his first arrival, and which formed the subject of his inaugural dissertation in Holland in 1735. He himself became a sufferer from this disease at the end of his sojourn in Holland. In Sweden intermittent fever occurred in clayey districts, and Linnæus first advanced the notion that particles of clay dissolved in water entered the blood and by arrest in the finer vessels interfered with cutaneous transportation. Later this theory of waterborne malaria was modified very much, and the disease was attributed to absorption by the skin of foul particles in the air, namely, miasms from quiescent waters, closed cellars, graves, decomposing animal and vegetable materials. Air, he urged, must contain some form of acid because vegetable and animal tissues and fluids become sour under its influence. Now, is it not possible that intermittent fever is caused by a coagulation of the serous part of the blood under the influence of "animalcula infinite parva" in the atmosphere which carry this acidifying substance. In further support of this theory he mentions the endemic occurrence of the disease in moist places with clayey soil and foggy atmosphere; the frequency with which it affects persons living on the ground floor or in cold, foggy places; the sour sweats of malarial patients, and the fact that bitter drugs, such as cinchona, which generally diminish acidity in the body, are the most useful in malarial diseases. Consumption, he believed, was caused by the inhalation of fine particles in the air which is permeated by minute floating substances of diverse kinds; this he illustrated by referring to the frequency of "tussis calculosa" among the stone-cutters in Orsa. Dalarne. He frequently makes mention of the contagiousness of tuberculosis. As an especially efficient treatment of incipient tuberculosis horseback riding is urged.

MISCELLANEOUS INVESTIGATIONS AND OBSERVATIONS.

In 1746-47 and 1754-55 he was engaged especially in studying a peculiar disease then appearing in the southern parts of Sweden (dragsjukan). His observations were summarized as follows: The disease attacks only the lower classes, but children never; it occurs only in the autumn and may show itself in domestic animals also; it lasts for two or three months, generally attacking several persons in the same household, but nevertheless it is not contagious. He concluded that the disease, which we now know as ergotism, is due to the use of freshly gathered corn; and as it occurred mostly after wet summers, when weeds abounded, he assigned the real cause to the weed predominating in the fields, namely, *Raphanus raphanistum* (jointed charloch or black radish), and suggested the name raphania. The disease was known under this term until the correct name arose from a more exact knowledge of its etiology.

Much of Linnæus' work is contained in dissertations by his pupils and many of them were enlarged transcriptions of lectures. A collection was made in a series of ten volumes,* of which seven are by Linnæus and three by Schreber and Erlangen. Pulteney gives an abstract of those by Linnæus' students.

Linnæus emphasized much the diagnostic and prognostic importance of the pulse. Actual knowledge of circulatory diseases seems to have been well advanced at that time, because we find he attributes irregular pulse to any of the following conditions: inflammation of the heart; dilatation of its muscle; aneurisms; tumors, polypi and abscesses of the heart; inflammation of the valves; obliteration of the pericardial cavity and other lesions of the pericardium; irregular action of the cardiac nerves. Further, it may depend on paralysis or spasm of the vessels, inflammatory stasis, ossification of the arteries, aneurisms and polypoid concretions. Finally, the cause may be in the blood itself.

It is of much interest to note that Linnæus suggested that fibrinous polypi within the vessels may be loosened and cause death from sudden suffocation. In other words, he recognized fairly well the mechanism of pulmonary embolism.

Linnæus distinguished correctly between cerebral hemorrhage and congestion. His description of hemicrania is excellent, being himself a sufferer from this affection. In 1742 he described well a typical case of aphasia under the title of "Failure to remember substantives, especially names" (Glömska af alla substantiva och isynnerhet namn). Matthew Baillie described aphasia first in English, and that was in 1806.

His study of the gadfly of the reindeer—Œstrus tarandi—during a journey of scientific exploration into Lapland while still a youth, is an excellent example of power of observation and of accurate and decisive description. In the first place the fly is described accurately, as is the method of disposition of the eggs on the skin by means of the tail. Then he shows that the gnats penetrate the skin at a time when the horns are in the velvet and so soft that the pests can not be driven away, the entire series of events as well as the intricate mechanisms brought into play being ascribed to the ingenious arrangement of an all-wise Creator. Even then he studied carefully sickness among men and animals.

Rosén and Linnæus made many important observations concerning parasitic worms; among those described is Tenia solium (Linné, 1756). He taught that tenia had no head and that it might grow ad infinitum.

CONCLUSIONS.

In terminating this fragmentary sketch of a small part of the work of Linnæus it seems to me that he is fully entitled to a place among the founders of the scientific school of medicine whose object it is to understand the nature of disease and to find and remove the causes of disease. The underlying principles, the scope and the results of his teachings and his labors entitle him to this distinction. At the same time as his predominating influence on the study of natural science in general, both directly, especially in Sweden, and indirectly advanced the scientific study of medicine, he himself and his pupils made distinct and permanent additions to our knowledge of diseases. He fully recognized and urged the importance of theoretic investigation in medicine, unprejudiced observation at the bedside, anatomical inquiry and rational therapy. Finally, he saw glimpses of great etiologic truths in regard to infectious diseases at a time when the great and populous microscopic world was indeed a "mundus invisibilis."

APPENDIX.

Linnæus' one foible according to the standards of today was love of fame and this frailty is freely exposed in his diary, the part of which concerning medicine is transcribed as translated from the Swedish manuscript in Pulteney's work, second edition, edited by Maton:

Linnæus practiced physic at Stockholm from 1739 to 1741; he was physician to the great naval hospital there, and had, besides, as much practice as all the other physicians collectively; but, on being made Professor, he relinquished the whole of it, because either that or his duties as a Professor must otherwise have been neglected. From this period, therefore, he attended only his friends and the poor.

* Amœnitates academicæ seu Dissertationes variæ Physicæ, Medicæ, Botanicæ, etc. G. Dubois, 1748.

Physiology derived from him an important discovery, namely, Generationem ambigenam. Harvey maintained that the rudimentum futuri fœtus lies in ovi puncto saliente; Leeuenhoek, that it lies in genituræ verminulus spermaticis; Linné, on the other hand, that from the mother comes Carina Malpighii, rudimentum encephali, and from the father punctum saliens cordis, et inde totum corpus. This he proved by observations on hybrid animals, hybrid plants, etc. Thus, sense and temper, with tenaciousness of life, proceeded from the mother, but external appearance and habit, with strength of constitution, from the father. The Medulla spinalis would grow in infinitum if it were not confined by the spina dorsi tandem ossificata in pubertate; et a retropressione libido. The contrary happens in Tæniæ, and in vegetables which have no bone in their composition. Ossea crusta will grow infinitum, cæteris paribus. The object of respiration, he thought, is to extract the electric fluid from the air by the lungs and thus to transmit it to the medulla, becoming the spiritus animalis, as it were; and hence, that the chief office of the lungs is not to accelerate the motion of the blood. Some foreigner has considered this as an hypothesis only, but Linnæus as an axiom.

Pathology is a subject on which he corresponded more than thirty years with the learned Sauvages, above one hundred of whose letters are in his hands.

Genera Morborum have not been so clearly defined by any one; there is not a single word in them that is not useful; his work on this subject is an excellent compend for a tyro. He has divided fevers into three classes, after a method entirely his own: Exanthematicæ, typo scabici, ad exanthematibus vivis contagiosis; Criticæ, typo rheumatis (Fluss), ab acido seri sanguinis; Phlogisticæ, typo inflammatorio, a putrido cruoris sanguinis.

He was the first to explain that Tænia had no head and grows infinitum, and also that fragments of this creature sprout again.

That Lepra is caused by a species of Gordius, found principally in herrings, has since been confirmed by the Norwegians.

To show that Raphania is occasioned by the Raphanistrum required his thorough acquaintance with natural history.

He maintained that Scorbutus is caused by culinary salt.

Diet nobody has treated of in a more solid and satisfactory manner, though he did not publish anything on the subject. His doctrines, like those of the later natural philosophers, are deduced from experience, and his system, like theirs, may therefore be called experimental. Everything was deduced from occurrences in common life, cited in their proper places as examples, on which account his auditors were never more numerous than when he lectured on this subject. Several persons took notes at these lectures, but all the notes I have seen are incorrect.

Pathology, the foundation of the whole medical art and of all medical theory, has been more improved by Linnæus, in his Clavus Medicinæ of eight pages (which is a masterpiece in its way and one of the greatest treasures in medicine) than by a hundred authors and books in folio.

The Mechanical Physicians, indeed, had shown that the action of the Sapida consists in relaxing or constringing, according to the nature of their taste; but neither the species saporis, nor their contraries were explained—much less the nature of the Olida. Linné was the first who saw that nature is balanced by contraries, and acted upon numero quinario. He saw that the Creator had given to animals two senses, viz., taste and smell.

That the Sapida act only on the fluids and solids, or on the fibers.

That the Odora act only on the brain and nerves.

He found that Vitia Corporea, as well in the fluids as the solids, are only five in number.

That the Vitia Encephali, vel Systematis Nervosi are likewise five; each with the same number of contraries.

He likewise found that the Sapida and Odora are also five, with as many contraries, and that the right indication results from a comparison of contraries with contraries. He proved this by examples. What can be stronger?

For this was required all the knowledge that Linnæus possessed of diet, natural history, medicine, materia medica. Few physicians had been conversant with all these branches together. Fortunate were those students who, before his time, could acquire this knowledge.

Not to mention that Linnæus was the first who said that all our principal medicines are poisons; that physicians ought not to condemn poisons, but to use them, as surgeons their knives, cautiously.

The Materia Medica likewise was in a confused state, and many articles were imperfectly known until Linnæus reformed it. He introduced the genus, specific difference, select synonyms, place of growth, cultivation; deduced their medicinal effects and uses from the impressions they produce on the organs of taste and smell, and, lastly, described the several compositions, all of which had been either confounded or superficially treated of before, but by Linnæus were distinctly explained in his materia medica.

He was the first person who determined Sarcocolla, Balsam of Tolu quassia. He introduced several new articles; revived the use of others which had been forgotten: Ophiorrhiza, Fungus Melitensis, Senega.

Dulcamara. Linnæus was the first who brought this plant into general use in Sweden. He cured Syphilis and Scorbutus with it.† Virgo scorbuto summa afflicta, quam omnis generis remedia frustra essent adhibita, ejusque gradus ad summum pervenisset, Medicus Razout, concilio Sauvagesii, eam perfecte curavit solo usu decocti Dulcamaræ, quod remedium Sauvages ab Illo. Linnæo acceperat. Dulcamaræ decocto multos syphiliticos curavit Sauvages hujus usu à Linnæo edoctus.

Sauvagesium paucis ante abitum annis lippum, ut vix legeret librum, curavit Linné infuso caryophyllorum, ut ipse in literis fatetur "tibi debeo oculos meos."

Ledum. He was the first person who taught that it was the chief specific against the whooping cough.

Moschus. He was the first who introduced it for the cure of contagious diseases, and as a preservative or expellens horum, ex principio febrium contagiosarum ab exanthematibus vivis—now common.

R. Britannicæ (Rumicis Aquatici radix) applied to ill-conditioned ulcers, he was first informed of from America, and by him it was communicated to Europeans.

D'Ailland's powder he asserted to be (Pulvis) Baccarum Rhamni.

Guy's powder against cancer Foliorum Actææ.

INJECTION TREATMENT OF SYPHILIS BY MEANS OF A NEW MERCURIAL FORMULA.*

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In 1853 Alex. Wood[1] of Edinburgh introduced hypodermic therapy. Mercurial injections were first administered by Charles Hunter and Barclay Hill,[2] two Englishmen, in 1856. Hebra[3] in 1864 made a vain effort to treat syphilis constitutionally by means of large injections of corrosive sublimate, and Scarenzio[4] one year later carried on more successful and prolonged investigations by means of calomel injections suspended in gummatous solutions. All the above mercurial investigations, on account of the severe painful reaction induced by their administration, were short-lived, and would have doubtless remained unnoted and obscure had not Lewin[5] aroused new and well-sustained interest in this now generally conceded important field of therapy, in 1868.

Mercury and mercury alone is the sheet anchor in the treatment of the earlier stages of syphilis. It matters

† Act. Paris, 1761, p. 53.

* Read before the Ohio State Medical Society, at Toledo, May 29, 1902.

not through what avenue the administration takes place, lungs, intestinal tract or skin, or in what particular form—metallic, protoiodid, biniodid, sublimate, yellow oxid, red oxid, calomel, salicylate, foramid, sozoiodol, tannate, etc.—it is administered, it is the assimiliated mercury which is effective; each preparation, and each form of administration has its peculiar advantages and objections, and the method which presents the happiest combination of large dosage, easy tolerance, convenient administration, absolute control and excellence in clinical results, will readily appeal to be the most acceptable and preferable.

The inunction method is the oldest, and though eminently reliable, efficacious, and very generally employed, it has its serious objections. The rubbing of a dirty ointment over the entire body is uncleanly, courts comment and publicity, soils bed linen and under-garments, frequently induces an artificial dermatitis, is contra-indicated in hairy individuals, precludes frequent bathing, and without the aid of an attendant is applied with difficulty. Inasmuch as mercury is volatile at ordinary temperatures, and more rapidly at body temperature, this form of administration is essentially an inhalation treatment, and as such, is strongly contra-indicated in hemoptysis and phthisis, an objection which applies to the inhalation treatment in every form, whether it be worn in sacks (Welander[6]), or as mercolint, (Blaschko[7]). Moreover the treatment is inexact.

The internal administration is a simple, convenient and popular form of treatment. It is eminently an inaccurate method because it is impossible to determine how little or how much mercury is assimilated. This is particularly true, if, as frequently happens, gastro-intestinal symptoms intervene, or if old, inspissated-gelatin-coated pills, or too strongly compressed tablets, are administered. The gastro-intestinal disturbance is often sufficient to distress the patient, impair digestion, induce loss of weight and to exert debilitating influences of considerable moment to this class of patients. What is probably the most serious of all objections, is the fact that the assimilated mercury, for the most part, is carried directly to the liver which, as we are beginning to believe, exerts a marked filtrating, altering and eliminating influence on toxic substances. This form of treatment also permits the patient to continue indefinitely, discontinue, or renew, treatment, in accordance with his own volition, and removes him from the regulating attention and vigilance of the physician.

Other forms of treatment—vapor baths, water baths, wearing of mercurial cloth, sacks, etc.—though useful as adjuvants, have not as yet received the stamp of general approval of being sufficiently active and reliable to merit special consideration in this paper.

The method of injection, which has been employed as already stated since 1856, has at times received popular favor, and at times has fallen into disrepute, according to the conditions which on the one hand recommend it above all other methods, and on the other, render it more objectionable. If the objections, which are largely technical, can be overcome the features which commend this form of treatment are so pronounced as to render the method justly popular and ideal. White[20] as early as 1894, when the method was relatively in its infancy, and its technic imperfect, in a series of interrogations addressed to all the leading writers and teachers of syphilology, demonstrated that the method at that time had come into very general and popular favor, and elicited the expression of a satisfactory past and an hopeful future. To Lewin[8] belongs the credit of demonstrating that the injection treatment can be successfully employed in supplanting with desirable effect the other forms of constitutional treatment of syphilis, an observation promptly confirmed by Sigmund[9] and Zeissl.[10]

Lewin[11] demonstrated by means of a series of 14,000 cases that the duration of treatment was shortened from ten to four weeks, that recurrences diminished from 80 per cent. to 40 per cent., and that rapidity of action, exactness of dose and immunity from gastro-intestinal disturbances, aside from the numerous objections to other forms of treatment, strongly recommended the method of injection.

For the injection treatment, mercury in almost every form, sublimate, calomel, yellow oxid, salicylate, sozoiodol, foramid, metallic, bicyanid, glycocoll, aspargin, alanin thymolo-aceticum and in almost every combination, albuminates, peptonates, benzoates, suspensions in mucilage, oil of vaselin, olive oil, paraffin, oil of sweet almonds, etc., has been employed. A brief survey of this unusual large field of literature and a careful estimation of its results will serve to demonstrate that also in injection therapy, efficacy and success depend, largely if not solely, on tolerance, convenience and dosage.

That the injection method, by meeting certain requirements, possesses decided advantages over other forms of treatment, is evidenced by the innumerable attempts at substitution; that these requirements have not as yet been satisfactorily fulfilled, is evidenced by the fact that nearly all have been short-lived or their use limited to relatively few individuals, and that the other forms of administration still find a large and generous patronage.

This paper will not permit me to enter into the consideration of the non-success of the many remedies which have been employed and recommended for injection use. It will suffice to say that bichlorid, which has been received into most generous favor, proved too painful to be well tolerated, causing patients to involuntarily withdraw from treatment, often induced abscess formation and severe induration, and could be administered only in such small doses as to require almost daily visits, which is ordinarily too expensive and too time-consuming for the patient. Pain, abscess formation and induration militated against calomel and salicylate injections, and graver complications against intravenous injections. A preparation which meets the requirements more successfully, I believe, than any other, is the ol. cinereum, or gray-oil after the formula of Lang.[12]

℞.	Lanolini	3j
	Chloroform q. s. ad solutionem	10j
	Hydrargeri	6j
	Conteratur usque ad perfectissimam extinctionem hydrargeri.	
	Ol. vaselini	3j

This formula, with the following modifications, has been almost exclusively employed by me, in both clinical and private practice for almost a year with most gratifying results. The injection as originally prepared, according to Lang, I found to be somewhat irritating and difficult to preserve. The modified form is prepared* by using bidistilled mercury, the same that dentists use in preparing amalgams. Six grams of bidistilled mercury can be readily incorporated in the course of a few minutes with two grams of lanolin when rubbed together in a clean mortar, which dispenses with the use of chloroform, which is a decided irritant, and is not, I believe, completely eliminated in the ordinary

* Dentists exercise great care in the selection of a pure bidistilled metallic mercury for the preparation of silver alloy amalgams. The commercial metallic mercury obtainable from common sources will not form a satisfactory amalgam.

ficient; (e) glutinous, muriatic. The inter-relations between the fibers and the fluids are well expressed in the following sentence: "Qualis chylus, talis sanguis, qualis sanguis, tales fibræ, quales fibræ, tales oriuntur morbi." A fundamental idea seems to have been that equilibrium in nature depends on a constant struggle between opposites. "The human body may be considered as a balance, and when it equilibrates we feel well, but so soon as any overweight appears on either side, then we are sick." His principle of "contrariorum e contrarius curatio" is a further therapeutic application of this theory.

Materia medica was Linnæus' favorite branch in medicine. This naturally was due to the close relationship between pharmacology and botany. In those days botanists generally made incursions into medicine, and it undoubtedly was a source of much satisfaction to Linnæus that he could blend with his teaching of botany the practical part arising out of it, namely, materia medica. We know that he strove hard to introduce indigenous drugs into materia medica and to establish the cultivation of medicinal and other useful plants. He published a highly estimated Materia Medica (1749), which appeared in several editions in Germany. This work is regarded as his most important. The great A. von Haller calls it "commodissimum praelectionibus compendium, inter optima auctoris," and Gronovius and Royen added their compliments. For a long time it remained as a model for other authors. The pharmaceutical plants were arranged according to his botanical system and a careful description given of those drugs used in medicine with a brief statement of their therapeutic value. He endeavored to include only useful drugs and warned strongly against complex formulæ. The empirical classification was abandoned in favor of one based on the general theory that "sapida in fibras, olida in nervos agunt." The chief merit of the work is that by bringing some degree of order and system into this branch he laid the foundation for the scientific study and development of materia medica. He was instrumental in introducing into medicine quassia, solanum, dulcamara, and many other substances. Hjelt lays much stress upon Linnæus' effort to establish the nature of poisons which, he urged, give us the best medicines if rightly used.

Another noteworthy book is his "Clavis Medicinæ," which contains his fundamental pathologico-therapeutic theories in the most concentrated form. Perhaps this is the most remarkable of all his works because it is a definite attempt to construct a comprehensive medical doctrine upon the basis of certain theoretical conceptions. It certainly is a striking example of Linnæus' ability to co-ordinate and arrange scientific facts of various kinds under one leading idea. Couched in a more or less aphoristic language, it makes rather difficult reading. It is dedicated to Sigfr. Albinus, Anatomico summo, Alb. von Haller, Physiologico summo, Gerardo Van Swieten, Observatori summo, Franc. de Sauvages, Pathologo summo, Nicol v. Rosenstein, Therapeutico summo.

LINNÆUS' DIETETICS AND HYGIENE.

Linnæus was interested especially in dietetics and hygiene, and his lectures upon this topic were largely attended, and served to create marked professional and popular interest in hygiene, which thus got an early start in Sweden. He mentions six principal requisites for natural life, namely, fresh air, bodily movement, sleep, food, excretions and affections. He attributes hysteria and other morbid conditions among the rich to sedentary life. He explains the effects of air, exercise, etc., according to his general pathologic principles, as is further shown in this table from his "Clavis Medicinæ."

	Fluida.		Solida.	
1. Excreta	Densa,	Torrida,		
	Tenuia,	Humida,	Retenta	2.
3. Motio	Phlogistica,	Tenacia,		
	Acidula,	Tenera,	Qvis	4.
5. Vigiliæ	Aeria,	Macra,		
	Oleosa,	Pinguia,	Somnus	6.
7. Fames	Pauperata,	Gracilia,		
	Plethorica,	Turgida,	Cibus	8.
9. Frigus	Muriatica,	Rigidia,		
	Glutinosa.	Fluxa,	Calor	10.

The application of his general pathologic and therapeutic theories to hygiene is illustrated further by the following statements: Atmosphere influences the body through heat and cold. Cold renders the fibers stiff and the fluids more salty, leading to crystallization and stone formation, while warmth relaxes the fibers and promotes the formation of glutinous material. The softer the fibers the greater the viscidity, the opposite of salty. Motion makes the fluids active, the fibers tenacious, and as the fluids are distributed the parts come closely together. Rest leads to the production of acid and renders the fibers brittle. Sleep leads to fat in the solid parts and makes the fluids oily; hunger and waking makes the fibers thin and the fluids sharp, hence the best remedy for fat is waking. Excessive evacuations render the fluids thicker and fibers dry, bodily enfeeblement and emaciation resulting, while retention renders the solid parts moist and the fluids thin.

LINNÆUS' ETIOLOGIC THEORIES.

Linnæus paid especial attention to the question of etiology of disease. He regarded the cause as of fundamental significance in determining the kind of disease in a given case. Like the old physicians, he divided causes into proximal and remote, and according to his theory the proximal cause lay in changed tension of the solid parts or in altered mixture of the fluids, while the remote causes might be found in diet, age, bodily constitution, or in contagion.

Perhaps the most remarkable of Linnæus' various medical theories is the one concerning "exanthemata viva," or that contagious diseases depend upon the entrance of small living animals into the body. This assumption he regards as fully warranted, both in analogy and experience. Of such diseases he mentions scabies, epidemic dysentery (scabies intestinorum interna), pertussis, smallpox, pest; later leprosy, phthisis pulmonum and the malarial fevers were added to this category. While the small animals Linnæus had in mind had not yet been seen or described, he saw in the manner of the spread of infectious diseases a remarkable similarity to the mode of reproduction and increase of many animals, especially insects. The smaller an animal the more numerous and rapid its progeny, hence it is not difficult to conceive that some of these minute organisms by their excessively rapid multiplication may in a short time totally fill, as it were, the whole human body. As an illustration of this fact he cites the inoculation of smallpox, in which the quantity of pus used is of no import in securing the development of good pustules. That the contagious element is destroyed by cold, but multiplies in warmth is cited as another evidence of the parasitic origin of contagious diseases. Ustilago is cited as analogous to the contagious element. The drugs that destroy insects of various kinds—musk, camphor, mercurials, sulphur, etc.—were useful also in contagious diseases.

Linnæus always felt much interest in intermittent fever, which was endemic about Upsala at the time of his first arrival, and which formed the subject of his inaugural dissertation in Holland in 1735. He himself became a sufferer from this disease at the end of his sojourn in Holland. In Sweden intermittent fever occurred in clayey districts, and Linnæus first advanced the notion that particles of clay dissolved in water entered the blood and by arrest in the finer vessels interfered with cutaneous transportation. Later this theory of waterborne malaria was modified very much, and the disease was attributed to absorption by the skin of foul particles in the air, namely, miasms from quiescent waters, closed cellars, graves, decomposing animal and vegetable materials. Air, he urged, must contain some form of acid because vegetable and animal tissues and fluids become sour under its influence. Now, is it not possible that intermittent fever is caused by a coagulation of the serous part of the blood under the influence of "animalcula infinite parva" in the atmosphere which carry this acidifying substance. In further support of this theory he mentions the endemic occurrence of the disease in moist places with clayey soil and foggy atmosphere; the frequency with which it affects persons living on the ground floor or in cold, foggy places; the sour sweats of malarial patients, and the fact that bitter drugs, such as cinchona, which generally diminish acidity in the body, are the most useful in malarial diseases. Consumption, he believed, was caused by the inhalation of fine particles in the air which is permeated by minute floating substances of diverse kinds; this he illustrated by referring to the frequency of "tussis calculosa" among the stone-cutters in Orsa, Dalarne. He frequently makes mention of the contagiousness of tuberculosis. As an especially efficient treatment of incipient tuberculosis horseback riding is urged.

MISCELLANEOUS INVESTIGATIONS AND OBSERVATIONS.

In 1746-47 and 1754-55 he was engaged especially in studying a peculiar disease then appearing in the southern parts of Sweden (dragsjukan). His observations were summarized as follows: The disease attacks only the lower classes, but children never; it occurs only in the autumn and may show itself in domestic animals also; it lasts for two or three months, generally attacking several persons in the same household, but nevertheless it is not contagious. He concluded that the disease, which we now know as ergotism, is due to the use of freshly gathered corn; and as it occurred mostly after wet summers, when weeds abounded, he assigned the real cause to the weed predominating in the fields, namely, *Raphanus raphanistum* (jointed charloch or black radish), and suggested the name raphania. The disease was known under this term until the correct name arose from a more exact knowledge of its etiology.

Much of Linnæus' work is contained in dissertations by his pupils and many of them were enlarged transcriptions of lectures. A collection was made in a series of ten volumes,* of which seven are by Linnæus and three by Schreber and Erlangen. Pulteney gives an abstract of those by Linnæus' students.

Linnæus emphasized much the diagnostic and prognostic importance of the pulse. Actual knowledge of circulatory diseases seems to have been well advanced at that time, because we find he attributes irregular pulse to any of the following conditions: inflammation of the heart; dilatation of its muscle; aneurisms; tumors, polypi and abscesses of the heart; inflammation of the valves; obliteration of the pericardial cavity and other lesions of the pericardium; irregular action of the cardiac nerves. Further, it may depend on paralysis or spasm of the vessels, inflammatory stasis, ossification of the arteries, aneurisms and polypoid concretions. Finally, the cause may be in the blood itself.

It is of much interest to note that Linnæus suggested that fibrinous polypi within the vessels may be loosened and cause death from sudden suffocation. In other words, he recognized fairly well the mechanism of pulmonary embolism.

Linnæus distinguished correctly between cerebral hemorrhage and congestion. His description of hemicrania is excellent, being himself a sufferer from this affection. In 1742 he described well a typical case of aphasia under the title of "Failure to remember substantives, especially names" (Glömska af alla substantiva och isynnerhet namn). Matthew Baillie described aphasia first in English, and that was in 1806.

His study of the gadfly of the reindeer—Œstrus tarandi—during a journey of scientific exploration into Lapland while still a youth, is an excellent example of power of observation and of accurate and decisive description. In the first place the fly is described accurately, as is the method of disposition of the eggs on the skin by means of the tail. Then he shows that the gnats penetrate the skin at a time when the horns are in the velvet and so soft that the pests can not be driven away, the entire series of events as well as the intricate mechanisms brought into play being ascribed to the ingenious arrangement of an all-wise Creator. Even then he studied carefully sickness among men and animals.

Rosén and Linnæus made many important observations concerning parasitic worms; among those described is Tenia solium (Linné, 1756). He taught that tenia had no head and that it might grow ad infinitum.

CONCLUSIONS.

In terminating this fragmentary sketch of a small part of the work of Linnæus it seems to me that he is fully entitled to a place among the founders of the scientific school of medicine whose object it is to understand the nature of disease and to find and remove the causes of disease. The underlying principles, the scope and the results of his teachings and his labors entitle him to this distinction. At the same time as his predominating influence on the study of natural science in general, both directly, especially in Sweden, and indirectly advanced the scientific study of medicine, he himself and his pupils made distinct and permanent additions to our knowledge of diseases. He fully recognized and urged the importance of theoretic investigation in medicine, unprejudiced observation at the bedside, anatomical inquiry and rational therapy. Finally, he saw glimpses of great etiologic truths in regard to infectious diseases at a time when the great and populous microscopic world was indeed a "mundus invisibilis."

APPENDIX.

Linnæus' one foible according to the standards of today was love of fame and this frailty is freely exposed in his diary, the part of which concerning medicine is transcribed as translated from the Swedish manuscript in Pulteney's work, second edition, edited by Maton:

Linnæus practiced physic at Stockholm from 1739 to 1741; he was physician to the great naval hospital there, and had, besides, as much practice as all the other physicians collectively; but, on being made Professor, he relinquished the whole of it, because either that or his duties as a Professor must otherwise have been neglected. From this period, therefore, he attended only his friends and the poor.

* Amœnitates academicæ seu Dissertationes variæ Physicæ, Medicæ, Botanicæ, etc. G. Dubois, 1748.

process of preparation. This simple modification did not suffice in itself to render the preparation as unirritating as desirable, and substitutions for oil of vaselin were successively tried with oleic acid, liquid paraffin, castor oil, cotton-seed oil, olive oil, etc., before a preparation was found which successively combined stability with nonirritability. This ingredient proved to be liquid albolene, which not only held the constituents well suspended and rendered them unaffected by ordinary temperature changes, but made the preparation so fluid that it could readily be utilized for injection purposes, though the mercury was increased from 50 to even 75 per cent.

The following has proved to be an excellent working formula and can be readily prepared, with a proper regard for asepsis and cleanliness by an office girl of average intelligence.†

℞ Lanolini 2
Hydrargeri bidistil. 6
Conteratur usque ad perfect extinctionem hydrargeri.
Liq. albolene 2
Sig.: Inject one grain (.06) every three or four days.

This preparation can be readily drawn into a hypodermic syringe, the needle applied and successive doses measured off by means of the retaining screw until the syringe is exhausted. One additional syringeful can be held in reserve and in this manner the treatment of each individual patient requires but a few moments of time. The injections should be made preferably into the buttocks at their most prominent aspect, alternating from right to left with each successive injection.

It has been my rule to give an injection every fourth day, using a grain dose (which contains approximately one and one-third grains of metallic mercury), and continuing until fifteen injections have been administered, that is to say, at least twenty grains of metallic mercury. In many cases I increase the dose to almost two grains, according to the indications, without untoward results. By this method relatively ten times more mercury is administered with each injection than with the regulation 15 grains of the 1 per cent. bichlorid, foramid or succinamid solutions, and more than twice the amount in the regular injections of calomel, salicylate, thymolo-acetate, yellow oxid, etc.

In all cases where the patient showed no marked intolerance to the remedy and remained free from complications, the injections were made at regular four-day intervals, and in many cases with a slightly progressive increased dose. My personal experience had impressed me that there are no special indications for a progressive decreased dose, and a gradual prolongation of the intervals between successive injections, as strongly urged by Ullmann,[13] Lang,[14] et al., in order to prevent any accumulative action and a consequent unfavorable action in such resulting complications as ptyalism, mercurial nephritis, etc. Mercurial stomatitis was carefully avoided as far as practical by exercising great care of the teeth, but, when it did ensue, as it is frequently wont to occur in clinical practice, its course was apparently scarcely more severe or intractable than that resulting from other forms of treatment.

† In warm weather, some of this liquid albolene separates from the preparation, and floats freely on the surface, which gives the mercury a doubtful percentage. This can be easily remedied by the following modification in what may be conveniently termed the "summer" formula.

℞ Lanolini ..... 1|0
Hydrargeri ..... 4|0
Conteratur usque ad perf. extinctionem hydrargeri.
Liq. albolene ..... 1|0

Sig. Inject one-half grain every three or four days. One-half grain by volume contains approximately one grain of mercury by weight.

In recent infections the injections were instituted with the appearance of the roseola, in accordance with the well-sustained views of Düring,[15] Taylor,[16] Watrazewski;[17] three courses of fifteen injections are administered during the first year of infection, two courses the second, one the third, and one every two or three years thereafter.

A seven-eighths inch 22-gauge steel needle is employed, which insures that the injection is deposited deeply into the layer of subcutaneous fat; the injection is supplemented with a few moments of gentle massage. In the beginning the injections were made with a needle one and three-eighths inches in length, in order to insure insertion into the deep muscles; experience soon taught that these injections were unnecessarily painful and poorly tolerated. It is not my practice to remove the syringe from the needle after insertion, as recommended by Lesser,[18] in order to test hemorrhage, and in more than 2,000 injections which have been made to date I have yet to note the slightest symptoms of embolism in the form of syncope, cough, pain in chest, shortness of breath. (Watrazewski, Quincke, Ludstrom, Oedmansson, Blaschko, Epstein, etc.) The clogging of needles, an objection which has been raised against the use of insoluble preparations (Bayet),[19] does not attain to this particular preparation; one needle suffices for more than a hundred injections, and is weakened and destroyed by erosion before it becomes plugged.

During the past twelve months, out of a total experience embracing 240 cases of syphilis, the injection treatment, wherever practical, was exclusively used, so that more than 2,000 injections were administered. Cases that had not attained puberty or where esthetic objections were offered, were excluded. The method has been employed sufficiently long, and the number of cases and injections have been sufficiently large, I believe, to warrant the unqualified statement that the results, as regards tolerance, excellence of clinical results, absence of complications, convenience and general efficacy, have exceeded the most sanguine expectations. This opinion is also shared by those of my colleagues in whose hands I have placed the remedy, whose impartial, unprejudiced and unbiased judgment gives it much additional weight.

Pain over the site of the injection is seldom noted. If present, it is usually slight and manifests itself for the most part during the second 24 hours. Its slight and transient character when present is best evidenced by the fact that patients submit willingly to the treatment and seldom voluntarily withdraw from treatment, even though they belong to the clinical ambulatory class. Induration over the site of the injection is usually slight and often imperceptible. Exceptionally patients show an idiosyncrasy to such a degree that localized pain and induration become so severe as to indicate a change to some other form of treatment; these patients often acquire tolerance, especially with diminished dosage. A change to some other form of treatment became necessary because of pain and induration in eighteen cases, or in about 10 per cent. of the cases treated. Abscess formation occurred in a single case, and was induced by careless administration of the injection in the hands of a student in a clinical case; the needle entered obliquely and the contents were deposited subcutaneously.

Marked improvement was noted in all the cases; material gain in weight, rapid amelioration of symptoms, improvement in appetite, color and activity were evident. A few cases responded promptly to this form of treatment that failed signally with other forms, and others,

that showed intolerance to internal medication or inunctions, readily tolerated the injections. A case of multiple cutaneous gummata, in a physician, following a long-standing extragenital infection, responded promptly to six ill-tolerated injections, after inunctions, internal administrations and potassium iodid in large doses had failed to favorably influence the condition. A case of severe syphilis, associated with progressive gummatous infiltrations and destruction of tissue, yielded promptly and completely to one course of injections, and after other methods and large doses of potassium iodid failed to benefit. Clinical examples of this character could be multiplied almost indefinitely, but it will suffice to state that, in point of efficacy, the treatment embraces all that is desirable, and that patients experience marked improvement, not only during the treatment, but a state of well-being that persists for many months after the treatment is suspended. In the vast majority of cases the patients show the greatest tolerance; in a few, owing to inexplicable idiosyncrasy, the distress is severe enough to render the treatment uncomfortable or a change to some other form highly desirable if not imperative. Taken all in all, its greater tolerance and the absence of complications should give this formula the preference over other forms of injections, and with the improvement in these directions the other natural advantages which accrue to the injection treatment over the internal and innunction methods, should give it the high and important place in syphilitic therapy which my personal experience during the past twelve months leads me to firmly believe it justly and deservedly holds. It has not, however, reached as yet that high state of perfection which bids it to entirely supplant all other forms; both the internal and inunction methods will still play very important rôles, not only as separate forms, but also when combined with each other or with injections, in accordance with the special indications. Every modification which renders the injections more tolerable and, at the same time, removes the likelihood of complications, is a step nearer the goal, and, inasmuch as the obstacles leading thereto are almost purely technical, it seems not at all unlikely that this goal can and will be reached as soon as mercurial injections attain the same relative tolerance that iodin injections have recently attained in iodopin.

One word of caution should be sounded in the use of this preparation: It is best to begin the treatment with a minimum dose (¼ to ½ grain per injection) and to gradually increase to 1 grain or more, in accordance with the degree of tolerance manifested by the patient. Great care should be exercised that the technic is properly carried out, and that a syringe, provided with a retaining screw, is employed; the screw should be properly set to guard against an excessive dose. These features should be forcibly impressed because their inadvertence in the hands of a few colleagues has been followed by untoward results. In one unfortunate instance an injection was made into the calf of the leg, instead of utilizing the gluteal region.

To recapitulate, the success of syphilitic therapy depends on the amount of mercury assimilated by the body, no matter in what form or through what avenue it is administered. Inunctions are objectionable because they are uncleanly, court comment and publicity, entail inexact dosage and predispose to dermatitis. The internal treatment is inaccurate, predisposes to gastro-intestinal disturbances, emaciation, anemia and the assimilated mercury is subjected to the altering, filtering and eliminating action of the liver. The injection method dispenses with all the above objections and combines with rapidity of action, relative greater efficacy, shorter treatment, diminished recurrences. Its strongest objections, in all its various forms, have been intolerance (local pain and induration), grave complications and small and too oft-repeated dosage, instability, difficult preparation and administration of the remedy. These objections have been in a measure relieved by the above modified formula of oleum cinereum.

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TREATMENT OF TUBERCULAR PERITONITIS.

WITH THE REPORT OF A UNIQUE CASE.*

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The opinions advanced in this paper are based on a study of the literature of the subject and a personal experience in the operative treatment of twelve cases. The time and the occasion make it incumbent on me to express myself concisely. No attempt, therefore, is made to explain in detail the reasoning nor the observations on which the opinions are based.

VARIOUS CURATIVE AGENCIES.

All forms of tuberculous peritonitis have been known to recover under medical treatment alone. All recoveries from tuberculosis of the peritoneum which follow operation can not be said to be due to the operation. The percentage of cures following operation is probably not so high as one is led to believe by the statistics of operators. The mortality of operation *per se* is not underestimated.

Celiotomy has a decidedly curative effect. This effect is due, not to any single cause, but to several. There is good reason for believing that all the theories offered are founded upon facts, but no single theory will explain all the cures.

LIGHT AS A CURATIVE AGENT.

The importance of the curative effect of light and air are, I believe, underestimated by most authors. Generally speaking, the best results have followed those operations in which the peritoneum was freely exposed both to light and air. All forms of the disease have been cured by operation, although the ascitic form has yielded the best results and the ulcerating and caseating forms the worst. Other foci are benefited by operation, so that

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the existence of tubercular deposits, in the lung, for instance, adds another reason for operation in a given case, rather than against it.

OPERATIVE TECHNIC.

The operative technic in tubercular peritonitis should be such as to give the patient the benefit of as nearly all of the known curative agencies as is possible with the use of good judgment. The inoculation of a tuberculous peritoneum with putrefactive bacteria is a procedure too dangerous to be practical. Incision should be free; fluid, if present, completely removed; tubercular foci, if accessible and not too numerous, should be removed. Adhesions should not be disturbed save when necessary for the removal of tubercular deposits, fluid or the relief of bowel obstruction. An exception to this rule should be made in those cases in which the adhesions are easily separated and extensive enough to prevent free access of light and air. Drainage is dangerous and should not be used except in cases of mixed infection. Lavage with hot water is not injurious and may be beneficial. Chemical antiseptics should not be used save in mixed infections. The abdominal cavity should be freely exposed to light and air for several (ten to fifteen) minutes. I can conceive of no valid objection to the exposure of the cavity either to the *x*-rays or the ultra-violet rays of Finsen. I would advise a trial of both of these agents, and am preparing to use the latter in the next case coming to me for treatment. That actinic light will penetrate the human body seems proven, but there seems to be sufficient reason for believing that the efficiency both of the *x*-rays and actinic light, in the treatment of tubercular lesions, is much enhanced by exposure of the lesion to the direct influence of the rays.

There is good reason for believing that operative treatment along the lines indicated above, coupled with direct exposure of the abdominal cavity and contents to actinic light, or to the *x*-rays, will prove a better method of treatment for tubercular peritonitis than any other yet devised. In case the actinic light or the *x*-rays is not available, the cavity and contents should be freely exposed, for several minutes, to the strongest light that is available.

REPORT OF A UNIQUE CASE.

The following case is deemed worthy of record. A synopsis is: Tubercular ascitic peritonitis of lower abdomen and pelvis; protrusion (hernia) of sac through inguinal canal; excision of sac; closure of canal; median laparotomy with complete removal of fluid; cure of hernia and tubercular peritonitis.

CASE 1.—McD., female, aged 14, an inmate of the Orphans' Home, was referred to me by Dr. L. P. Drayer, for an operation for radical cure of hernia. An examination showed a reducible, right inguinal hernia, with a suspicious dulness and hardness of the lower abdomen. Family history negative. Had been an inmate of the home three years. In November, 1900, complained of lump in right groin and some feeling of distress at this point, as well as in whole lower abdomen.

Operation.—In April, 1901, she was placed in my care at the Hope Hospital. After the usual preparation, the operation was done under ether anesthesia. An incision was first made down to the sac, when it occurred to me that the case might be one of hernia of the bladder. A solution of permanganate of potash was therefore thrown into the bladder and a hypodermic syringeful of fluid subsequently withdrawn from the hernial sac. This fluid showing no traces of the permanganate proved this suspicion incorrect and an incision was made into the sac large enough to permit introduction of the finger. I now learned that I had a large cavity filled with fluid and of uncertain origin. I therefore opened the belly in the median line for a distance of three inches between the umbilicus and pubes and through this incision discovered for the first time the true nature of the trouble. The peritoneum forming the sac was studded with tubercles. The roof of the sac was formed by agglutinated intestines and stretched across the abdomen, about on a level with the iliac crests. The pelvic contents were healthy save that the peritoneum covering them was studded with tubercles. The cavity was emptied of fluid, wiped dry, the hernial sac excised and both wounds closed with catgut sutures, including the skin. The patient's recovery was uneventful and she is now (eleven months after the operation) enjoying apparently perfect health.

It is proper to note here that after leaving the hospital, she was treated by Dr. Drayer, her physician, for two months by abdominal inunctions of Credé's ointment and the internal administration of hypophosphites, and was given the full benefit of the sunshine and open air.

Thomson[16] has had three cases in male children in which there was tuberculosis of the patent vaginal process coexistent with general peritoneal tuberculosis. The cases were cured either by simple incision of the process or by excision of it. Gould also says Harold Stiles, Goldman and others have reported similar cases. I have not been able to find the reports of Stiles or Goldman. Jordan[75] reports a case of tuberculosis sicca of a large irreducible inguinal hernia. After an exploratory incision, the hernia became reducible, the patient's health improved and the thick masses found at the time of the operation largely disappeared, but a sinus which discharged thin pus still remained. Naumann[44] reports two cases of congenital hernia with peritoneal tuberculosis in which he withdrew the fluid through the hernial opening. Further details of Naumann's cases are not given in the abstract referred to and the original[76] article was not available when this was written.

These are all the cases similar to mine of which I could find the reports. It will be noted that mine is unique in that the hernia was acquired and consisted only of sac and fluid contents.

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DISCUSSION.

DR. JOSEPH RANSOHOFF, Cincinnati—It is very evident that no one method is going to be of advantage in all cases, and also that very many cases of so-called surgical tuberculosis get well under medical treatment. It is perhaps an inopportune time to discuss this subject, so far as the surgical aspects are concerned, but it seems that the time is not far distant when the *x*-ray will be enabled to make a surgical operation superfluous in some cases. In cases which have apparently gotten well and in which relapses made second operations necessary, where the *x*-ray had been used in the meantime, such a change had taken place in the tubercular nodules as to make one feel some remarkable good was accomplished by the *x*-ray. In two of my cases of ascites I did nothing but drain. Both recovered perfectly, and both young women are now in good health. One of these cases is of 7 years' standing. I did not go to the radical procedure of removing the tubes, although it has been said that it is just as well to do so, in order to prevent tubercular progeny. We have all seen tuberculosis of the male gland treated simply by incision and in whom subsequently the possibility of enjoying parentage was not interfered with. Are we justified in coming to the conclusion that a tubercular tube must be removed any more than a tubercular testicle should be? Conservatism is the order of the day in one and why not in the other. In these cases it has been my experience that the less the interference the better and we should not interfere unless we have to. The danger of postoperative generalization of the disease must not be overlooked.

DR. A. E. HALSTED, Chicago—My experience in the operative treatment of tubercular peritonitis is limited to eight cases. One of these cases demonstrates that operative treatment is not always successful, and that it is not, as is generally supposed, devoid of danger. This patient died as the immediate result of operation. A second case demonstrates that complete recovery is possible, even where there is extensive glandular involvement.

My opinion is that light and air have very little effect on this condition. It is difficult for me to see how such short exposure of the peritoneum to the air and light could affect materially well-developed tubercles. My experience in this disease leads me to believe that the good effect of the operation is due entirely to the reaction that follows the trauma to which the peritoneum is subjected. Gatti demonstrated in his experimental work on tuberculosis of the abdomen, that the disappearance of the tubercles and cicatrization which resulted after operations for tubercular peritonitis, was the result of the bactericidal action of the exudate that followed opening of the peritoneal cavity. He further found that this exudate which corresponded in its chemical properties to blood serum possessed a greater bactericidal action than does normal blood serum. From this, it is my opinion that the operation will be followed more frequently by cure if we resort to swabbing and irrigating the peritoneal cavity. I do not believe that any chemical substance that can be used with safety in the peritoneal cavity is of much value in the cure of peritoneal tuberculosis. Undoubtedly the good effects that have followed the use of iodoform are due to its action in producing traumatic peritonitis. As to the breaking up of adhesions, I have found that it can not be done with safety to the patient. In these cases, where the adhesions are very extensive, it is better to limit the operation to the opening of the peritoneal cavity to evacuating the fluid and swabbing the surface of the diseased membrane with salt solution. In cases where we have a number of circumscribed, sacculated exudates, I consider that each of these cavities should be opened and drained. I am not in favor of immediately closing the abdomen in these cases, but believe that considerable benefit follows drainage.

As to the etiology, we now know that by far the greatest number are from infection that spreads from the pleura, or lung, and that it is only in rare cases that the primary focus can be demonstrated in the tubes. We must also remember that where the tubes are found diseased that this condition may be secondary to the abdominal tuberculosis.

As to the prognosis after operative treatment, it may be said that the best results are to be had in those cases with the ascitic form of tuberculosis. In these, a definitive recovery may be expected in from 40 to 50 per cent. In the adhesive form, the prognosis is very much more unfavorable, only about 15 or 20 per cent. recovering after operation. In the ulcerative and suppurative form, operation is, in my opinion, practically useless. As to the value of removing the tubes in these cases, I believe that it will be difficult to determine in any case positively whether or not the tubes are the primary seat of disease. If for any reason we suspect they are, it would be only rational to remove the tubes at the time of operation.

I wish to report two cases that are of peculiar interest, inasmuch as one illustrates a complete cure, and another a fatal termination:

CASE I.—Miss D. Young woman, unmarried, aged 19, had up to two weeks before been well. At that time she noticed that the abdomen was larger than usual. This rapidly increased and was associated with indefinite abdominal pain and obstinate constipation. There was some dysuria and a decided diminution in the quantity of urine. On examination the abdomen was found considerably distended and there was free fluid in the abdominal cavity. The thorax was negative, as were the liver and pelvic organs. There was no definite abdominal tumor and the general appearance was fairly good. The skin was decidedly pigmented, so that it had a bronzed appearance which suggested Addison's disease. The sclera was icteric.

There was a slight puriform vaginal discharge which on examination showed no tubercle bacilli or gonococci. At the end of the week she was operated on.

A second examination before operation showed an area of dulness which extended from a point half-way between the ensiform cartilage and the umbilicus and pubis. This area was wider in the meso-gastrium than above and below, measuring at its widest part about four inches. On palpation there could be felt a distinct tumor mass, spindle-shaped in outline and giving the sensation of fluctuation. This was freely movable latterly, but appeared attached above and below. On each side of this dull area there was a tympanitic area on percussion, until the area of free abdominal fluid was reached. A diagnosis of abdominal tuberculosis was made by excluding other forms of ascites. There was no history of tuberculosis in the family.

Operation.—The abdomen was opened by a median incision, and a large quantity of straw-colored fluid escaped. The intestines were found adherent in many places; it was closely studded throughout its entire extent with small miliary tubercles. The bursa omentalis was rolled on itself and in its lumen was fluid. The lower end of the omental tube was attached

to the anterior abdominal wall close to the pubis. No attempt was made to separate the inherent coils of intestine. The fluid was evacuated as completely as possible and then drained.

The patient's condition during the first twenty-four hours following operation was not materially changed; temperature normal, pulse rapid and mind clear. At the end of the first twenty-four hours she was suddenly attacked with severe epistaxis. This was controlled by plugging the nares. Within a few hours hemorrhages began from all the mucous membranes. At the same time large purpuric spots appeared on the chest and the extremities, which increased in size and number until the entire surface of the body was covered. Intermuscular hematoma also developed. The temperature rose to 100 F., pulse gradually became imperceptible and she died in coma thirty-six hours after the operation.

(Discussion continued on p. 624.)

FURTHER EXPERIENCES WITH A MODIFICATION IN THE OPERATIVE METHOD FOR INVETERATE RELAPSING AND ALL AGGRAVATED FORMS OF PES EQUINO-VARUS.*

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OMAHA.

Congenital deformities involving chiefly the mediotarsal joint come so frequently to our notice that they seem to have lost interest. Manipulations, brisement forcé, tenotomies and retentive appliances when carried out with judgment and patience in time tend to recovery in a large number of cases. When these corrected deformities pass from under the observation of the surgeon the results are designated as satisfactory, meaning by that, that the plantar surface rests squarely on the floor and that walking is accomplished, not perfectly, for there is still a slight limp, a slight toeing inwards, possibly a moderate rolling inwards of the entire extremity. The patient and friends are cautioned that relapse is possible and probable if corrective measures are at once abandoned. Your injunction, it is one thing to correct a deformity and an entirely different and more important matter to keep it corrected, is given with emphasis in the hope that it will be heeded. It is a well-known fact that individuals often tire of prolonged attention and care so needful to make permanent a certain result. Consequently, many cases recorded as cured return after a lapse of time, partly or completely relapsed. Often the deformity has become aggravated to an extreme degree, so that the outer and upper side of the foot is the surface bearing the superimposed weight, the plantar surface pointing inward and backward, presenting a well-known type known as inveterate and relapsed talipes equino-varus. Every surgeon is brought face to face with relapsed cases of his own, he sees more who have been in the hands of other surgeons. It is impossible to repress the desire for some method that promises greater certainty as to permanency. He has found that gradual corrective measures, or operative procedures that involve a long post-operative treatment are unsatisfactory, chiefly on account of indifference on the part of the patient or his attendants. Constant attention is necessary; retentive apparatus is early broken or is rapidly outgrown, requiring frequent renewal, creating an expense unwillingly borne. Unfortunately, the vast number of cases of foot deformity are found among the poor, who can ill afford the necessary appliances. They have not the means nor the time to devote to the proper attention demanded by such a case. The indications are plain. Some plan must be devised whereby a pes equino-varus may be corrected which is unattended by a prolonged after-treatment.

NATURE OF THE DEFORMITY UNDER CONSIDERATION.

The deformity that shall engage our attention for a few moments consists of a deviation inward and downward of that portion of the foot chiefly anterior to the medio-tarsal joint, causing the superincumbent weight to be borne on the outer and often the dorsal side of the foot, with a shortening of all the soft structures on the concave side of the deformity, consisting of the skin, superficial and deep fascia, fibers of the internal fasciculus of the plantar fascia, the adductor hallucis muscle, internal plantar nerve and artery, the tendon of the tibialis posticus and anticus, internal lateral and calcaneo-scaphoid ligaments. The soft structures on the outer or convex side of the deformity are elongated. The tarsal bones have become modified in accordance with their abnormal relations to each other.

HOW THE DEFORMITY MAY BE OVERCOME.

The indications to be met consist in elongating the shortened soft structures, replacing the bones, dividing and excising on the convex side of the deformity such hypertrophied and distorted osseous structures as interfere with complete replacement. Whether this is accomplished by force or by subcutaneous or open-cutting operation the tendency to recurrence must always be taken into account, therefore, over-correction has become the rule. And yet this over-correction has not always been sufficient to prevent recurrence. All operative and mechanical methods require repeated sittings, extending over a considerable period of time, making it irksome to the patient, and he frequently passes from observation before the cure is complete.

THE PHELPS OPERATION.

Phelps, in 1881, made the most radical departure from the then prevailing methods, by boldly cutting all the soft structures on the concave side of the deformity and then forcing the foot into a valgus position. His earlier efforts were followed by partial recurrence of the deformity owing to imperfect antisepsis.

When Schede made known his observations on healing under a moist blood-clot in bone cavities, its application found a place in the Phelps operation. The wound was covered with a silk protective, retaining a blood-clot under it, insuring a more rapid reparative process and a less degree of recurrence. Many modifications of the Phelps method have been undertaken, chiefly by Mr. Arbuthnot Lane, F. H. Kellock and Muirhead Little, with the aim to cover the large wound, and Dr. William Gardner sought to overcome the osseous defects by inserting between the scaphoid and astragalus a wedge of decalcified bone to fill the space resulting from correcting a severe varus deformity.

THE AUTHOR'S METHOD.

It was the writer's privilege to present to the Western Surgical and Gynecological Association at its Omaha meeting, a modification which has proven useful in the hands of several surgeons, in permitting immediate correction of the deformity and at the same time guarding against recurrence. The steps leading to the adoption of the plan were made after personal trials of various skin-flap operations, both pedunculated and free. They

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. H. O. Walker, A. J. Ochsner and DeForest Willard.

possessed the drawback of the liability to necrosis from inefficient blood supply, and yet integument was the only tissue that could cover the large gap in the Phelps operation. It was evident that if an attached flap with a broad pedicle could be produced that under all circumstances could contain a sufficient blood supply to insure its life, at the same time cover a greater part of the wound, more particularly the deeper part of the wound produced by the severed fascia, tendons, muscles and ligaments, we should make an advance toward more rapid repair and obviate to a large degree relapses.

It was proposed to make a triangular flap, similar to that sometimes used in relieving Dupuytren's contraction of the hand, a V-shaped incision as advocated by Busch and others for cicatricial contractions after burns on the flexor sides of the extremities. An incision was made, beginning slightly below the margin of the plantar fascia on the inner side of the foot, at a point on a line directly below and anterior to the internal malleolus, extending forward and upward to a point on the first metatarsal bone and nearly to the metacarpo-phalangeal joint. A second incision was made, beginning at a point over the astragalo-scaphoid articulation, extending forward and slightly downward, joining the first incision near the meta-tarso phalangeal joint, forming a V. The incisions were deep so as to include all the subcutaneous structures, including the fat. This flap was dissected backward to the points where the incision began, producing a large triangular wound, making it possible to divide all the necessary structures under the guidance of the eye. All the soft structures were thus exposed. The inner fasciculus of the plantar fascia was divided diagonally. The diagonal division of the plantar fascia was done, so that after correction there should be left no defect between the divided ends, but that the points of the incised fascia should still lie in contact, thereby lessening the tendency to contraction. The remaining structures were then divided as directed by Phelps, until the astragalo-scaphoid capsule was reached. Instead of dividing this, another incision was made on the outer side of the foot over the head of the astragalus, extirpating first the bursa which is usually present, then the tendons and soft structures were pushed to one side and the neck of the bone was exposed. The neck of the bone was then cut with a chisel. The foot could then be pushed outward without separating the astragalo-scaphoid articulation, which nearly always occurs in the Phelps operation. Occasionally, in old and inveterate cases, it became necessary to make a cuneiform excision of the neck, and in several instances the neck and head of the astragalus were removed. The varus having been over-corrected and turned into a valgus, the equinus deformity was relieved by a subcutaneous division of the tendo Achillis. All hemorrhage was easily controlled with catgut ligatures and pressure. The triangular flap was then turned back; it covered the wound except at its anterior point. No sutures were employed. A perforated silk protective covered the wound. The outer wound over the astragalus was closed with catgut. An antiseptic dressing was applied and over this a retentive dressing of plaster of paris, beginning at the toes, extending upward above the knee, including one-third of the length of the thigh. The dressing was not disturbed under five weeks. The wounds were then completely healed.

ITS VALUE PROVEN BY EXPERIENCE.

Further experience with this method has demonstrated its usefulness. An increasing experience has given an increasing confidence. The triangular flap falls of its own weight over the defect left by the retreating severed soft structures, entirely preventing the shelving edges found in the original Phelps operation. The healing process is shortened on account of the smaller surface to be covered by the process of epidermization. The astragalo-scaphoid ligaments were not severed, avoiding an opening of this joint, consequently preventing the great gap between the articular surfaces, which is unavoidable in the combined radical cutting followed by forcible correction. It was found that the axis of the neck of the astragalus had deviated inward in old cases so that the articular surface of its head was inclined inward, offering a most stubborn resistance. No amount of force could overcome this. A transverse division of the neck with an osteotome in nearly all cases permitted a replacement of the anterior part of the foot with very little force and the astragalo-scaphoid joint was not opened. In several instances a cuneiform excision from the astragalus neck with a sharp, bone-cutting forceps was required for complete reduction. In a few very advanced cases the head of the astragalus had to be removed. In two instances the astragalus was so rotated that its superior articular surface was inclined outward to a degree that it rested in part against the fibula, necessitating a division of the internal lateral ligament, before the bone rested normally against the tibial articular cartilage.

The triangular flap, although at first employed for old and relapsing cases, is now used wherever force and subcutaneous tenotomies are inefficient, whether the cases are recent or old.

CONCLUSIONS.

In conclusion we may say that:

1. The triangular flap is indicated in cases of pronounced talipes equino-varus wherever an open operation is necessary to overcome the deformity which involves the medio-tarsal joint.

2. The astragalo-scaphoid ligaments and capsule must not be incised or torn.

3. When the division of the soft structures is not sufficient to overcome the varus deformity an incision over the head and neck of the astragalus must be made and the bursa extirpated.

4. The neck of the astragalus must be divided transversely with an osteotome. If this is not sufficient, then remove a wedge from the neck; if that fails, remove the head.

5. If the astragalus has rotated so that its superior articular surface is inclined outward, and a replacement is impossible, the internal lateral ligament must be divided, which can be done through the opening made by the triangular flap.

6. The best possible guarantee against relapse is to divide soft parts and bone, so that the foot falls into its natural position with little or no pressure.

The French System of Prophylaxis Against Tuberculosis.—Professor Phocas of Lille remarks that the sanatorium treatment of tuberculosis can be called the German system, and superabundant feeding the English system, while the seashore children's asylums can be called the French system of combating tuberculosis. The French have a number of well-equipped and well-managed seashore hospitals for children, and the aim is to send to them scrofulous and other sickly children and transform the predisposition to tuberculosis into sound health. The *Nord Méd.* of August 1 commences the publication of the annual report of the sanatorium at St-Pol-sur-Mer, in charge of Phocas, which shows how much can be accomplished in this line.

THE PREVENTION OF DEFORMITY.*

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While the entire medical profession of this generation are earnestly striving to better the condition of the human race by the prevention of disease, it seems an opportune time also to enlist their efforts toward the prevention of the many deformities of the body which surgeons are called upon to treat. That great results have followed the establishment of proper quarantine regulations is admitted by all, and the wonderful change in the conditions of Havana and other Cuban cities since the American military surgeons have been placed in control of sanitary affairs, is a matter of sincere congratulation and the good effects will be far-reaching. In many other directions preventive medicine is attracting the attention of the entire world, and no subject is more thoroughly discussed to-day than the prevention of tuberculosis. While authorities may differ as to how the result can be best and most speedily accomplished, all agree that it must be done. On this last point there is no difference of opinion. But while medical men admit that deformities of the body will occur unless certain precautions are taken to prevent them, the vast majority of patients coming to the surgeon for the relief of deformity clearly state that nothing was ever done to prevent its occurrence. That this subject has not received the attention it deserves will be admitted by all.

The desire to prevent unnecessary suffering, to prevent deformity, to obviate the necessity of surgical operations and the wearing of apparatus should be the aim of every medical man who is called upon to treat a patient whose disease is of such a character that unless proper treatment is given, deformity will follow, yet most cases of infantile paralysis, chronic joint disease, burns and many other conditions are treated only with the idea of curing the diseased condition, and no attention is paid to the resulting deformity. From an experience in public work at the Hospital for the Relief of the Ruptured and Crippled in New York City and from private records, the writer believes that more than half the deformities seen could have been prevented, and the time will come when they will be, and the long list of operations for the correction of deformity following infantile paralysis, chronic joint disease, faulty decubitus in typhoid fever, rheumatism and other conditions, will no longer figure so prominently in the records of work done by the surgeon.

Practically all the deformities due to poliomyelitis or infantile paralysis can be prevented. "The original lesion does not primarily produce a deformity, but simply a loss of power in the muscle or muscles affected. The production of deformity is due to: 1, gravity; 2, the action of non-paralyzed muscles; 3, the arrested development and growth of all tissue in proximity to the muscles paralyzed; 4, the results of weight applied to the weakened structures; 5, all other causes."[1]

"The contractures may come on very slowly, and in the foot, after several years, there may only be a slight equinus, yet that equinus, by the patient's endeavor to walk flat on the foot, may be the cause of a most severe hyperextension at the knee and much subsequent trouble."[2] Thus we see one deformity causing another, and, had the first been prevented, the subsequent care of the patient would have been much simplified. Most of the deformities are of the lower extremities, because it is more often affected, and because the various causes that produce these results have better opportunity here than elsewhere, and some form of clubfoot is the condition needing treatment. The varieties of clubfoot are many, and the non-congenital are nearly all preventable by simple treatment and by a clear recognition of the fact that unless care is taken they will occur. Non-congenital clubfoot may be divided into: 1, simple acquired; 2, paralytic; 3, traumatic.

1. Simple acquired clubfoot includes all cases due to rachitis, rheumatism, chorea, hysteria, malaria, chronic ergotism, faulty positions in standing, tumors, weak ankles, relaxed ligaments, sprains, diseases affecting hip, knee, leg, foot or ankle, non-paralytic, as synovitis, arthritis, caries, necrosis, osteomyelitis, etc.

2. The paralytic includes all cases due to poliomyelitis anterior, hemiplegia, meningitis, myelitis, progressive muscular atrophy, spastic cerebral and spinal paralysis, compression myelitis, irritation of pyramidal tracts, syringomyelia, etc.

3. The traumatic includes all cases due to fractures, dislocations, injuries to skin, fascia, muscles or nerves, burns and cicatrices.

"In an analysis made in 1890 of 7,101 cases of clubfoot seen by different observers, 3,601, or over half, were non-congenital in character, showing the accuracy of the statement that fully half the deformities seen are preventable."[3] By manipulation, massage, light retentive dressings, of wood, paper, felt, leather, plaster of paris, silicate of soda, steel, etc., any portion of the body can be so kept that the various causes mentioned can not exert their harmful influence and deformity can be prevented and this is especially true of non-congenital clubfoot.

In chronic joint disease the proper treatment consists in the cure of the disease without deformity, but how often is this accomplished? "Osteitis of the knee, involving either the lower end of the femur or upper end of the tibia, or both bones, with or without destruction of the joint, is followed in about 50 per cent. of the cases by deformity."[4] The same is true of the hips, and certainly these results are not what they should be. Following burns of the various parts of the body, deformities often occur, and in most cases could and should have been prevented. Contracted fingers, elbows drawn to such an extent that the hand nearly touches the shoulders, feet in marked equinus or calcaneus, extreme torticollis are illustrations familiar to all surgeons. After operations on bone, deformities often occur. They are due to failure to realize that although an excision of the knee has been skilfully performed, yet the union is not firm enough to support the body weight for many months. "For the prevention of flexion deformity it is necessary that apparatus be worn for a very considerable period after the operation,"[5] and this is also true of other articulations. After operations on muscles for the relief of deformity, care must always be taken lest the same recur.

To faulty decubitus in any form of illness many deformities are attributed, and these can nearly always be prevented. A flexed knee, a contracted heel-cord, a deviated spine, are familiar examples, requiring subsequent tenotomies, myotomies and even operations on the bony system for their correction. The amount of damage done in this manner is but little appreciated, and to recommend that the knees of every typhoid patient be stretched daily, or even fastened to a straight

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posterior splint would probably cause most medical men to believe that the one suggesting it had lost his reason, but the writer has seen subluxation of the tibia and such extreme hamstring contraction follow in some cases that, despite the best efforts of the surgeon, the knees could never be restored to their normal condition. Every surgeon can recall instances where forcible stretching and myotomies had to be done for the relief of deformities that the patient could have prevented had the family physician or nurse simply made the suggestion that the knees or feet be occasionally stretched.

In synovitis, in rheumatic joints, in septic conditions of soft parts or articulations, the possibility of faulty positions becoming permanent should always be taken into consideration. A shortened lower extremity from any cause, a tilted pelvis, an inflamed joint or inflammation of the soft parts may lead to spinal curvatures that should have been prevented, and it is the duty of all to see that such deformities do not occur.

Faulty position in school, the carrying of undue weight on one side, the failure to properly maintain the erect position are all familiar conditions that lead to deformities that are in most cases easily prevented, and many more examples could be cited. Toe drop from the application of splints, of bandages for knee or hip disease, for fractures, dislocations, sprains or diseased conditions of any kind, is a preventable deformity, because if the foot is kept at a right angle with the leg it will not occur.

Permanent stretching of muscles, as in wrist drop, etc., from palsy of any cause, such as poisoning from lead, can be prevented by simple means; yet many treat the disease and pay no attention to the prevention of deformity. Many congenital deformities are most amenable to treatment, such as the slight degrees of clubfoot, but if treatment is delayed for any cause, the deformity becomes serious and most difficult to treat.

The prevention of deformity, therefore, should be clearly impressed on all those who are called upon to treat any condition that may lead to it, and once it is clearly understood that certain deformities frequently seen can be prevented, many a patient will be spared much inconvenience and subsequent trouble. The extreme deformities often seen might also have been much less marked in many instances if the fact had been recognized in early life that certain precautions should always be taken to prevent their increase, or to prevent other deformities from occurring.

The prevention of deformity is a subject that must be attended to by the family physician, because the surgeon is rarely called until it has occurred. He is asked to correct it by the use of the knife or by some other method, but his best efforts are often disappointing to all concerned, although in most instances he can relieve the condition, if not entirely overcome it.

The methods to be used in preventing any particular deformity will readily suggest themselves to the physician, or can be found in most of the works on orthopedic surgery, and need not be referred to at this time. The plaster of paris dressing is, however, one that can be recommended in many instances, and is cheap and always obtainable. Early and correct diagnosis and the recognition that deformity does occur in many cases must be impressed on all medical men, and then the prevention of deformity will necessarily follow.

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DISCUSSION

ON PAPERS OF DRS. JONAS AND TOWNSEND.

DR. H. L. TAYLOR, New York—The prevention of deformities is a question of great interest not only to the surgeon but to the community. Dr. Townsend has presented his case with great clearness, and the point made that many of the congenital deformities were in a sense preventable, is a good one. Those that are easily curable in the early stages are often extremely deformed later if neglected, and surgeons are often confronted with this condition of things. The patients will tell you that they have been advised to postpone treatment until a certain age on the understanding that the patient will outgrow the deformity—and there are cases where this point of view is, in a measure, justified, as, for example, in rickets—but there is seldom any reason for postponing treatment for years and it is poor advice to say that the deformity will be outgrown, unless you are certain that this will be the case. As to the paralytic deformities, only yesterday I had occasion to operate on a case of infantile paralysis in a four-year-old child, the contractions being in front of the hip and behind the knees and ankles, necessitating an extensive operation. Tenotomies of the heel cords and of the ham-string and open dissections to the structures in front of the hip joint had to be done. These deformities are easily preventable. If one-tenth of the attention were devoted to the prevention of deformity in these case of infantile paralysis that is devoted to the employment of electricity, the results would be better. Another class that is often preventable are those deformities which follow fracture, and in two locations this is especially true—for example, in deformities following Potts' fracture of the foot, of which we see scores yearly. If these cases were properly treated by replacement and inversion of the foot in the beginning, they would be prevented. Another class which is not always easy to prevent are the fractures just above the elbow, but careful management on correct principles will usually yield a good result.

Our medical confrères are hopefully striving to limit the speed of tuberculosis, but without waiting for the results of their labors, surgeons may hope by early and exact diagnosis of bone lesions in some instances to remove disease before it becomes dangerous to life or limb through joint involvement. Tubercular disease in or near the great trochanter should be located and removed in many instances before the hip is involved. Brilliant work in this line has recently been done in tuberculosis of the patella, and if attention is directed along this line such opportunities will be increasingly numerous.

As to Dr. Jonas' paper, I think his plan of making a sliding flap to cover a large part of the exposed area is a very good one, but I would limit the deep operation to intractable cases. We can nearly always cure our patients by simpler means, but in the older or in the more severe cases it seems to me he has suggested a very practical means for eliminating the unsightly defect usually left by the Phelps operation, and I thank him for his able presentation and practical suggestions.

DR. H. M. SHERMAN, San Francisco—As to Dr. Jonas' paper, I have to say that the Phelps method is one that I abandoned many years ago, as I failed to get the results I expected. I resorted to subcutaneous work whether it was in soft or hard tissues. The incision Dr. Jonas suggests is exceedingly ingenious, but I think the deep region can be equally well reached by a curved incision with the base downward and convex upward along the side of the foot. You can turn down this flap and do plastic operations on the tendons. It is not the skin that causes the relapse; it is the deeper tissues. Any method which gives free access to them is to be commended.

Dr. Townsend's paper covers an exceedingly wide subject, and unless we were to discuss each individual disease producing a deformity we would miss much. Plainly, it puts another task on the general practitioner, who must know exactly what deformities are likely to occur after each one of the conditions

which may confront him. In many such cases a deformity might be prevented, while in others surgery would be required from the very start. This is especially true after burns, for no amount of apparatus will control these deformities. It is wiser, for general reasons, that the general practitioner should have the orthopedist to aid him in all these cases. Dr. Townsend mentioned the contraction that occurred after knee-joint excisions; now sometimes a brace or splint will fail to control them. I have seen these cases go on to producing very bad pressure sores in a primarily well-fitting splint, which absolutely prohibited the flexion. When the splint was changed a little flexion occurred, and as the pressure sores prevented further efficient splinting, the average amount for these cases of flexion resulted. I believe these cases represent a type of secondary deformities of most obstinate character.

DR. A. J. STEELE, St. Louis—I want to say "Amen" to Dr. Jonas' paper. I believe there are very few cases of clubfoot that require interference with the bone, although a certain number of old cases may. Of course, when it is necessary we will have to do it, and I think going through the neck of the astragulus with a chisel is the best way. I have long since given up the Phelps operation. I believe most cases of clubfoot can be cured by subcutaneous surgery, and we should only divide the integument and bones when absolutely necessary. Plaster-of-Paris bandages should be applied to retain the foot in the improved position. Dr. Townsend's remarks are most timely. As our fees come from the cure of these deformities so the average citizen would say you are taking bread out of your own mouth by preventing them, scarcely appreciating our unselfish spirit and act. All that Dr. Townsend has said on the matter is correct. It should be our aim and object to teach the people the facts in the paralytic cases so that deformities may be avoided.

DR. C. E. RUTH, Keokuk, Iowa—This is a subject in which I have been considerably interested for years as these cases have occasionally given me considerable trouble. I have long since abandoned the idea of making a V-shaped resection in severe cases from the outer side of the foot because in many of these cases when the V is extended two-thirds of the way across the foot reposition places the anterior diagonally across the posterior section and the resulting bony contact is not what it should be. The sectioning of the bones even in extreme cases has not in my experience been necessary under four years of age. I have operated on a very difficult case, even at the age of thirty-four, where the soft parts on the inner side of the foot were so short that it would have required a sectioning of everything on the inner side of the foot in order to place the bottom of the foot downward. This case was operated on four years ago, and I secured a good result by the removal of the astragulus. Since then the man has been able to walk, even following the plough or doing any kind of work that he choose without marked inconvenience; there has been no tendency whatever to a relapse. In these cases it is not wise to flatten the foot too much by sectioning the soft parts and thereby abolishing an exaggerated arch. I heartily endorse every word that has been said in reference to the prevention of the deformity. As to sectioning the neck of the astragulus I think it is a very wise precaution in some of the severe cases where the soft parts will permit of replacement. It requires considerable force to retain the parts in a position. I was glad to hear the Doctor say we should use the plaster of paris above the knee and it is wise that when used in that position the flexion should be at least 35 degrees with complete eversion. If we extend the plaster of paris only to the knee there will be a very pronounced in-toeing which is very objectionable. I would like to have heard something about using the tibialis anticus to raise the outer side of the foot by detaching its internal tendinous connections and attaching same to the outer side of the foot.

DR. FRANK WARNER, Columbus, Ohio—Although my experience has been limited, even a few cases should enable one to draw some conclusions. In the correction of these cases of talipes we must do so in such a way that after restoring the foot to a normal position and you let loose of the foot, it will remain practically in that position, or at least require no decided tension to keep it there. Unless you keep the deformity well corrected in putting on your apparatus there is a likelihood of failure. In order to avoid much pressure to keep the foot in position you should make a division of the tissues sufficient to overcome all tension, not minding whether it means the bone as well as the soft parts or not. In relieving the deformity I do not believe it makes a great deal of difference what the character of the incision is. The keynote is to cut enough tissue so that the foot remains in the normal position by slight tension, when the retaining apparatus should be applied; but this apparatus should not be applied until a sufficient division of the tissues has been made so that the apparatus may easily hold the foot in position.

DR. C. E. THOMPSON, Scranton, Pa.—I have treated forty cases of this condition but have never commenced directly at the end of the third stage of labor, although I have begun in a few cases immediately after the baby was washed. The ages of my cases extend from this time up to thirty-five years, but of course this latter class is not the one to be corrected by the hand of the mother or the nurse. I have never done a Phelps operation but have watched very competent men do it sufficiently often to be satisfied that I did not want to practice it. My treatment has been the correction of the deformity by repeated stretchings, subcutaneous tenotomies and fasciotomies and retention in the correct position with plaster of paris casts for a long time. I will have to differ with Dr. Warner when he says that you must have your foot corrected so that it will remain corrected before you put on your appliance. The strongest element that I have ever used in the correction of this deformity is my hand and the patient's weight, together with a plaster of paris cast, so arranged that every step the patient takes aids in the correction of the deformity.

DR. JONAS, in closing—This discussion has been very interesting. It is admitted that the simplest method that will correct a deformity is the one to be employed. If manipulation is sufficient to restore the foot to its normal condition that is all that is necessary. The cases referred to in my paper were old relapsing cases, ones of extreme deformity, such as where the superimposed weight rests on the dorsal surface of the foot, with the plantar surface pointing in and backwards. All who have had experience in this line of work must admit that sometimes extensive operations become necessary and all surgeons will agree that an open operation is preferable to a subcutaneous method. An operation enables one to see exactly what is being done. I believe in the diagonal division of shortened soft structures so far as possible, but in cases where you can make a transverse incision without leaving any dead space between the tendons, one should do so. I have no other comments to make.

THE LEGAL STATUS OF THE TERM "REPUTABLE" AS APPLIED TO DENTAL COLLEGES.*

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Uniformity of dental laws and standards in the various states of this country has been a consummation long sought and most devoutly wished by those men who have followed, as well as those who have dictated and guided, the development of our educational methods, with a view to placing the dental profession of this country where it rightfully belongs before the civilized world.

UNIFICATION DIFFICULT.

The comparative ease with which the legal right to establish and maintain schools and colleges in any state or territory is secured is only exceeded by the great diffi-

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culties that have presented in all attempts to unify methods, curricula and standards for the conferring of the dental degree.

As schools increased in number, the estimated value of the dental diploma became more and more an unknown and uncertain quantity, which condition resulted in an effort toward the establishment by the people, through their legislative representatives, of some legal process of measuring and weighing the character and quality of any man's preparation and fitness, before permitting him to offer his professional services to the public.

Since, for obvious reasons, a national standard could not be secured through Congress, it was left for each state to enact its own police regulations. Through the power of association which has been steadily growing during the past forty years, concerted action in the different states was possible in securing legislative enactment. A general and uniform draft of statute was prepared and recommended to the several states by committees selected for that purpose. But concert of action does not always bring uniformity of outcome.

THE LAW IN VARIOUS STATES.

The result has been a multiplicity and variety of dental laws almost as different in their construction as it is well possible to conceive—viewed superficially. For instance, forty-seven states and territories of this country have enacted dental laws, in all but one of which a board of dental examiners has been created.

In twelve of these states no mention is made of the existence of a dental college. Any and all persons so desiring may be examined as to their fitness (no matter where acquired) to practice, and the board, in its discretion, licenses or rejects them. Eight other states, on the other hand, will admit no one to examination who is not a graduate of a reputable dental college. One state, Wyoming, has no board, but admits no one to practice without registering a diploma from a reputable college. Added to these nine are twenty-six other states which, while admitting all who may so wish to be examined by the board, at the same time direct the board to grant license without examination to those persons possessing a diploma from a dental college which complies with such standards and requirements as the law provides.

It therefore transpires that of the forty-seven enactments in this country for the regulation of the practice of dentistry, thirty-five specifically mention the possession of a diploma from a recognized or reputable dental college as a necessary or at least an important factor in securing a license to practice dentistry.

THE COLLEGE MUST BE "REPUTABLE."

The different state laws make different specific requirements of colleges whose diplomas they accept as a qualification for license, but practically all laws provide that the college, after fulfilling all other specifications, shall, in addition thereto, be "reputable." In each and every case the board of examiners is left without any instruction as to the method of procedure in determining the reputability of a college, or as to the scope and meaning of the word "reputable." It is simply prescribed that the college must be "reputable," thus placing upon the board the judicial duty of establishing criteria of reputability and choosing its own methods of applying them to colleges when called to act officially.

Naturally, when standards have been fixed by a board which conflicted with the interests, financial or otherwise, of a certain school and measured by which that school's diplomas are discredited, a definition of the board's powers and limitations has been sought by the use of mandamus proceedings. And there are several decisions extant on the statute books of different states, all sustaining the position of the boards where there was no question as to the competence and good faith of the examiners.

THE WISCONSIN COURT DECISION.

It remained, however, for the Supreme Court of Wisconsin, in a decision handed down Jan. 7, 1902, in the mandamus suit of W. L. Coffey vs. State Board of Dental Examiners, to so fully define and elucidate the whole question of the board's powers, and of what the statute means by the word "reputable," as to set at rest any further cause or excuse for mandamus proceedings.

The state board had officially refused to accept Coffey's diploma in lieu of examination for license by the adoption of the following resolution:

WHEREAS, After due and careful consideration, acting under and pursuant to the provisions of Chapter No. 56 c. of the Wisconsin Statutes, this board has decided that in the opinion and according to the best judgment of the board, "The Department of Dental Surgery, ... College of....." is not a reputable dental college; therefore, be it

***Resolved,* That this board does hereby refuse to accept the diplomas of said Department of Dental Surgery, ... College of ....., in lieu of examination for license to practice dentistry in this state.**

Under mandamus proceedings in the lower court, all the reasons why the board declared this certain college to be, in its judgment, "not reputable," were brought out on the witness stand. These included—besides proof of certain misrepresentations by members of the faculty, under official questioning by the board as to facts concerning the school and its management—deviation from generally accepted standards in matriculation and transfer of students, in equipment, in curriculum, in methods of and facilities for instruction and training and in several other particulars as to the methods of conducting the school.

The lower court held that the board had erred in some of its proceeding, and declared the school "reputable." The board appealed from this decision to the highest tribunal in the state. The Supreme Court reversed the decision of the lower court and sustained the action of the state board at every point in a most exhaustive opinion reviewing the testimony brought out in the lower court.

SUMMARY OF THE DECISION.

The following is the summing up of the law points by the court:

STATE OF WISCONSIN—IN SUPREME COURT.

State of Wisconsin, Ex. Rel. W. L. Coffey, Respondent.
vs.
C. C. Chittenden et al. Constituting the State Board of Dental Examiners, Appellants.

SYLLABUS.

1. The scope of mandamus proceedings to coerce a person or board to the performance of a judicial or quasi-judicial duty extends only to compelling such person or board to act, not to directing him or it how to act, unless the underlying facts are undisputed, leaving no reasonable ground for action other than one way.

2. If a person or board is clothed with judicial or quasi-judicial power in the determination of questions of fact and the taking of some specific action upon such determination, and fails to make a proper investigation of such questions, it is not within the function of a mandamus proceeding, predicated on such neglect, for the court to assume and exercise the duty of such person or board and make such investigation.

3. The character of a dental college or other institution of learning at a particular time may be established by evidence of its character at a prior time not so remote but that it would be reasonable to assume that the prior condition still exists. The rule applies that "when the existence of a person, a personal relation, or a state of things, is once established by proof, the law presumes that the person, relation, or state of things continues to exist as before, until the contrary is shown, or until a different presumption is raised, from the nature of the subject in question."

4. The character of a dental college in April of one year is evidentiary of its character in May of the next year, and may have sufficient probative force in that regard to reasonably establish such later character.

5. The word "reputable," as applied to dental colleges in the law authorizing the State Board of Dental Examiners to license persons to practice the profession of dentistry, without examination, who have graduated at such a college having certain specified requisites means *reputable* in the general sense in which the term is ordinarily used: Worthy of repute or distinction, held in esteem, honorable, praiseworthy.

6. In passing upon the application of a graduate of a dental college for a license to practice his profession in this state, the Board of Dental Examiners must determine whether his diploma comes from a reputable source as an independent fact, considering the term "reputable" in its ordinary sense and measuring the character of the college from the standpoint of men competent to judge thereof by reason of their scientific attainments in the line of work for which such a college stands.

7. The State Board of Dental Examiners, proceeding reasonably, is the sole tribunal under the statutes to determine the questions of fact to be solved, precedent to the licensing of a person to practice the profession of dentistry in this state.

8. When a graduate of a dental college applies to the State Board of Dental Examiners for a license to practice his profession, the burden of proof is upon him to establish the reputability of such college.

9. The State Board of Dental Examiners, having once determined the character of a dental college, may properly consider all questions in regard thereto at rest till, by lapse of time or otherwise, some reasonable ground exists for believing that its character may probably have changed.

10. The State Board of Dental Examiners having once determined the character of a dental college, within all reasonable limits, when and under what circumstances the subject shall be re-examined rests solely in its discretion.

11. Since the law does not define the method by which the State Board of Dental Examiners shall proceed to determine the reputability of a dental college when that is material to its official action, such board may perform its duty in that regard in any reasonable way it may deem proper, and candidates for licenses to practice the profession of dentistry must submit to its judgment so long as they are within the boundaries of reason and common sense.

(Syllabus by Marshall, J.)

THE DEFINITION OF "REPUTABLE."

Beyond a peradventure the foregoing syllabus definitely settles several things heretofore misunderstood or left in doubt.

First. The intention and meaning of the word "reputable" as applied to dental colleges is "Worthy of repute or distinction, held in esteem, honorable, praiseworthy."

Second. The question of reputability of a college as an independent fact is left to the decision of "men competent to judge thereof by reason of their scientific attainments in the line of work for which such a college stands."

Third. The state board, proceeding reasonably, is the sole tribunal under the statutes to determine the questions of fact to be solved.

Fourth. The burden of proof is upon the graduate to establish the reputability of his college.

Fifth. The state board, having once determined the character of a dental college, within all reasonable limits, when and under what circumstances the subject shall be re-examined rests solely in its discretion.

Sixth. The board may perform its official duty of determining the reputability of a dental college, in any reasonable way it may deem proper, and candidates for licenses to practice the profession of dentistry must submit to its judgment so long as they are "within the boundaries of reason and common sense."

The deduction of your essayist from all this is, that the question of unification of dental laws and interstate reciprocity of license, together with unification of dental educational standards on any reasonably high plane "within the bounds of common sense," is in the hands and entirely within the province and power of the state boards, provided they will act in concert in carrying out the high duties imposed upon them as the dental police officers of their several states, and this, too, without the enactment of any new dental legislation whatever.

The N. A. D. E. and the N. A. D. F. have enacted and adopted rules and educational standards that are acceptable to the profession at large, and have arrived at what general standards should be fixed as the criterion of reputability, but in order to make these "reasonable" standards nationally uniform it will be imperative that each and every state board in the union adapt them to its uses under its state laws and adopt them as its own standard of reputability.

Surely a standard built on such a broad foundation must be considered as coming "within the boundaries of reason and common sense," and therefore may be applied freely in judging the value of diplomas of any applicant for license in any state.

JUDICIAL POWER OF THE BOARDS.

In the twelve states first mentioned where the law compels the examination of everybody and does not make any mention of a diploma (taking the state of Massachusetts as an example), the character and scope of the examination is left absolutely to the discretion and judgment of the board—therefore it is entirely competent for that board to make the possession of a diploma from a "reputable" college as prominent a factor in the examination of a postulant for license as they may deem wise—and thus enables the boards of these twelve states to have as much to say as to what constitutes a reputable dental college as those of the remaining thirty-five states and territories where statutes do give a specified value to the diploma of a reputable college.

So it will be seen that the statute in every state in the union grants its state board all the judicial power necessary to join in the establishing of absolute national standards of dental educational requirements.

There is absolutely nothing in all this proposed unification of standards, etc., by the boards that can react in any but a beneficial manner upon the schools themselves. The element of commercial competition will be eliminated where it exists, and in its stead the spirit of emulation will be greatly stimulated.

THE OUTLOOK FOR DENTAL EDUCATION.

The improvement and advancement in the general character of the dental college course in the past very few years is a fact which gives great promise for the future of dental education in this country.

Few can know and appreciate at how great an expense of energy, time and strength, and with what sacrifice of self and the comforts of life the honest dental teacher carries on his labor of love. Many of our brightest and

best men have shattered their health and shortened or sacrificed their lives for the advancement and dissemination of knowledge in our colleges—and in almost no instance has the pecuniary return been in any sense adequate to the sacrifices made, and still the signs of the times indicate that the end is not yet.

The schools are building themselves on broader educational foundations, fitted to support a more elaborate and symmetrical superstructure, whose power and beauty shall command the respect and admiration of the civilized world—as well as set the pace for all Christendom.

School men have at last come to understand that the examiners, with the law at their backs, are a tower of strength in support of all honest educational efforts, as well as a menace to all forms of pretense and sham.

The only way in which this country can establish and maintain its supremacy in dental educational standards over the rest of the world, is by a concerted national legal standard being made by the legal guardians on whom the sacred trust is imposed—and these guardians must deserve and command the confidence and co-operation of the colleges, as well as the profession at large.

The question confronting us to-day is simply whether we as a profession will arise and enter into our birthright.

DISCUSSION.

DR. G. V. I. BROWN, Milwaukee—It is important for us to know that this is the first time that we have been able to take up the discussion of dental legislation with reference to the curriculum of advanced dental education and bring forward such changes as we desire to have made for the elevation of the profession with a certainty that we could carry them out. The term "reputable" as applied to colleges is now defined to mean having a standard which is in accordance with that of the best other similar institutions. This, also, might be extended to imply that a proper curriculum is one in accordance with what is laid down as right and sufficient by those best versed in the educational needs of dental colleges. It seems to me at this time like the opening of a wide vista before us as we contemplate the work to be done, and more especially with regard to the distinct line of progress in which this Section has been interested in for so many years. We can now take up intelligently the consideration of such branches as should be taught, how much and how little of each which are best adapted to the need of a dentist from the standpoint of the artisan purely, and which are more fitted to enable him to rank among the professional men of the world as this Section would have him, taking his rightful place in the rank of medical practitioners without sacrifice of manipulative dexterity. It seems to me that it is a very beautiful tribute we are called upon to receive and acknowledge, this crowning of the labors of Dr. Chittenden and of the other gentlemen who have carried on the work of the Section with high ideals, and to know that these aims are in a fair way to be consummated, to be made to feel, as all must whose hearts are tuned to vibrate in unison with thoughts that lead upward toward professional advancement, with its ultimate aim a beneficial service to humanity, that the members of that august body, the Supreme Court of the State of Wisconsin, are in sympathy with our work, and have taken notice of the self-sacrificing life-work of our confrère, Dr. Chittenden, by making clear the legal complications that for so many years have been our stumbling blocks. Even beyond the apparent necessities of the case in controversy has the legal status of boards of examiners in relation to courts of law and dental colleges been defined. A ruling has been handed down that will govern boards of medical, legal and other examiners as well as dental for years to come.

DR. M. L. RHEIN, New York City—I feel that all of the profession are indebted to Dr. Chittenden for the work of bringing this matter to such a magnificent consummation in his own state. In the East we have read with interest the controversies in the matter, but we felt that our interests were in very good hands. This magnificent decision is unquestionably a tribute to the esteem in which Dr. Chittenden must be held personally in the state of Wisconsin.

One of the things we have been striving for in our state is to get a unity of understanding so that the bearer of a license to practice in one state could practice in another. We hope that the present reciprocity between some states of the right to practice may be extended to other states. It is an unwarranted hardship to ask a man who has been practicing for some years to pass the ordinary examination. However, it would be folly for us to take into some of our states practitioners with the endorsement of some of the boards of examiners.

DR. A. E. BALDWIN, Chicago—I am glad that Dr. Chittenden has been able to present this paper to us and to the profession at large through THE JOURNAL of the American Medical Association, because it is a move in the direction of higher standards, higher education and broader qualifications. To my mind it marks an epoch which will be more readily recognized in the future. It seems to me that this so-called reciprocity in professional work should obtain. It is in every way reasonable and equitable, and once established, I believe it will do more for the elevation of dentistry than any other one thing. I feel that I can endorse very heartily the tribute of Dr. Brown to Dr. Chittenden. For fear of it being misunderstood by the readers of this paper, I want to say that I do not think this decision of the Supreme Court of Wisconsin was qualified in any way by the personal opinion of the Supreme Court judge for Dr. Chittenden. I do not think that was the meaning of Dr. Rhein. The decision of the court will be even more far-reaching than is perhaps now realized.

DR. RHEIN—I trust that my remarks did not bear the interpretation suggested by Dr. Baldwin. I meant that the record of our specialty coming through such a man as Dr. Chittenden proved that we are in a position to receive such a decision.

I would like to say, in regard to the troubles in Germany last year, and which were taken up by our consul, that in returning last summer from Germany one of our passengers was Professor Andrew D. White, our ambassador to Germany. It was a matter to me of great pleasure to see the interest taken in our specialty by Professor White, and desiring to send a message to those interested in this work in America, he said he wanted us to know that in anything in the nature of international complications he placed himself at our disposal, and wanted us to feel that we could have access to him at any time in reference to such matters as had come up last year.

DR. E. S. TALBOT, Chicago—If the state boards adopt the law as explained by Dr. Chittenden they have an immense power to wield in regard to dental colleges. The word "reputable," and in another clause "the burden of proof placed upon the graduate as to the reputability of the college" covers the ground. It relieves the state boards of much hard work and at the same time gives them the ability to maintain high standards. In taking this position the judge seemed to have an insight into the conditions and affairs and to have made it plain that any state board with the least amount of ability could place their board in a position to command the respect of all the colleges in the country.

DR. BROWN—As a matter of fact, reciprocity is a possibility and can easily be an actual fact. I do not suppose any of you will remember the Chairman's Address which I read at Columbus, but at that time I outlined the possibility of an arrangement whereby all individual boards could be guided and supervised by the National body and made the statement that though individual members of boards might in some instances prove to be mercenary and ignorant, and have secured their positions as a result of political appointment, a selected committee from the best representatives of all of the boards of the United States would be as nearly fair and honorable a tribunal as would be possible to secure. The board of Wisconsin has made all that possible. Under the direction of their attorney this board has prepared its own rules. Instead of being guided by the National body it has adopted for its governance certain rules and regulations, based on the rules

of the associations. Under the decision of the Supreme Court its members can require just exactly whatever the rule demands and thus, as they see fit, can raise the standard. The board is a judicial body and in the reasonable exercise of its proper powers can not be overruled by any court of law. If the different boards choose to adopt similar rules and regulations under these conditions the standard will be at once uniform and it will then be possible for reputable graduate licentiate practitioners to go from one state to another without being harassed by examinations, as they should be allowed to do. On the other hand, a safeguard is provided that takes away the possibility of having too loose or haphazard methods.

A part of our work for the future should be to prepare a way for the proper education of the dental student, for a wider medical education as a prerequisite for his full recognition as a reputable dental practitioner.

DR. J. L. WILLIAMS, Boston—If we can get good men on the state examining boards there will be no difficulty, but in some states the boards are ruled by politics. I think it is quite proper that the examining boards should have the legal power if they are well qualified and honest men.

DR. A. H. PECK, Chicago—The subject has been so entirely covered that I will simply say this, because I am anxious to go on record before the dental world and before the medical world as one who is in favor of everything which tends to uplift our profession. This has been my sentiment for years, and I am exceedingly glad that we have one man who has been on a state board of dental examiners for years, who has given the best part of his energy to the consummation of some plan as a standard for the future. Dr. Chittenden is the man, and he has given us to-day a careful résumé of the laws of the various states and their attitude toward dentistry. It is for us to say whether a school is reputable or not. I hope, further, that the power may be placed with them of determining the value or the reputability of a diploma given to a graduate by any institution. Men and women are turned out of our institutions with their diplomas who are not capable or should not come before the world as graduates of any reputable institution. So long as I hold a guiding hand in the affairs of an institution my efforts shall be in this direction: to uphold every effort of the state boards throughout the country looking to the elevation of the standard of dentistry.

DR. G. F. EAMES, Boston—I heartily endorse the statements so far as I have heard them, especially the remarks of the Chairman, and so far as I have looked over the paper. There is a great deal to be done with the state boards themselves, in my opinion, for certainly their methods of examination and questions that they have proposed, whenever they could be ascertained, have been far below what I should term a reputable standard.

Any further word that I might say would simply, if possible, make emphatic the suggestion of the unification of these laws and standards. When the standards of examiners in all the different states, or any number of states, are of the same degree, and of a satisfactory grade, then, it seems to me, it would be a very easy matter to enact laws by which a practitioner, having passed successfully one state board, may be admitted to practice in any state having an equivalent standard of examination.

DR. BALDWIN—If it would be in order, it seems to me it would be proper for a resolution of recommendation to go from this Section to the National Board of Dental Examiners requesting in the name of the Section on Stomatology of the American Medical Association that they look with favor on this interpretation given by the Wisconsin Supreme Court.

DR. CHITTENDEN, in closing—The difficulty in the past has been that the boards of examiners were antagonized by the schools and there was a spirit of commercialism in the faculties themselves and it was only after a serious struggle that it was possible for the examiners to get the colleges themselves to set a definite educational requirement for admission to their schools. From that point we have gone forward and the years intervening have brought the two institutions more closely together. Last year the faculties' associations recognized that the examining boards were really becoming their friends. The suggestions which I have endeavored to show you are absolutely feasible for the establishment of a National educational standard which may set the pace for the world. It is understood and known that the law of New York State is the best and the one requiring the highest standard in the United States. It has seemed to most men interested in dental matters to be a standard sufficiently high to be sought and chosen as a criterion to which all boards should come. The matter must necessarily move slowly. The boards are scattered throughout all the states of the Union and it is difficult to get them to coöperate. Once the colleges encourage what I have undertaken to describe, the boards will understand that it is a desirable thing. As soon as the educational standard was permanently established in 1899 commercialism practically ceased. With the standard as it is, no school can matriculate a man unless he can present credentials acceptable to the state superintendent of public instruction.

I can see no question, Mr. Chairman, that the propositions made in the paper are not absolutely feasible; that they may not be put into action and in that way enable us to set a standard of dental education for the world.

DR. BALDWIN offered the following resolution:

Resolved, That the Section on Stomatology of the American Medical Association heartily endorses the decision of the Wisconsin Supreme Court as to the judicial powers of the state board as to the determination of what constitutes "reputability"; and we heartily recommend this decision to the National Association of Dental Examiners as a basis for establishing professional reciprocity in our grand country.

On motion the resolution was adopted.

THE SYMMETRY OF OUR VISUAL APPARATUS AS A DUAL ORGAN.

A PLEA TO MODIFY THE CUSTOMARY NOTATION OF THE OCULAR MERIDIANS.*

HERMAN KNAPP, M.D.
NEW YORK CITY.

Our visual apparatus is a dual (paired) organ, symmetrically placed on both sides of the median plane of the body. In the skull the dual parts coalesce at two places, the chiasm and the quadrigeminal bodies which are cut by the median plane, whereas in all other places the dual parts are so arranged that each of their points on one side has a corresponding point at equal distance on the other, as if one side were a reflex image of the other, cast by a plain mirror substituting the median plane of the body.

Outside the skull, all the remaining parts, orbits and their contents, as well as the eyeballs with all their intricate structures, follow the same rule; each point has its correspondent at the same distance on the other side of the median plane of the head.

My purpose, at this place, is to consider only one part of our visual organ with regard to the law of symmetry, the refractive apparatus. A complete analysis of the final refractive effect would require the determination of the curvature of the anterior surface of the cornea, the curvature and position of the surfaces, as well as the coefficient of refraction of the lens, and lastly, the inclination of the cornea and lens toward the optical axis of the eye, i. e., the centration of the refractive system.

It is well known that the anterior surface of the cornea has a greater influence on the refractive effect than all the rest of the system together.

The cornea—meaning its anterior surface—is not a part of a regular geometric body, but what mathematicians call a skew surface (*surface gauche, windschiefe Fläche*), in which the meridians differ from one another, causing a visual imperfection, the correction of which

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. Frank Allport, H. V. Würdemann and J. A. Lippincott.

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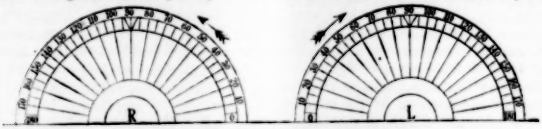
is one of the chief objects of the oculist's practice—astigmatism. The ingenious modification of Helmholtz's ophthalmometer by Javal and Schiœtz is accurate enough to determine the existence and degree of astigmatism as well as the direction of the principal meridians of the cornea, but falls short to determine the astigmatism of the whole eye, which not infrequently is influenced appreciably by the system of the crystalline lens. The determination of the astigmatism of the whole eye is satisfactorily done objectively with the ophthalmoscope by the direct method and the shadow test. The final test, however, always consists in the best correction of the vision with glasses. In this way the refractive condition can be determined with great accuracy. By these examinations, which every oculist has to make daily, it has come out that the principal meridians may be found in any position, yet with varying frequency.

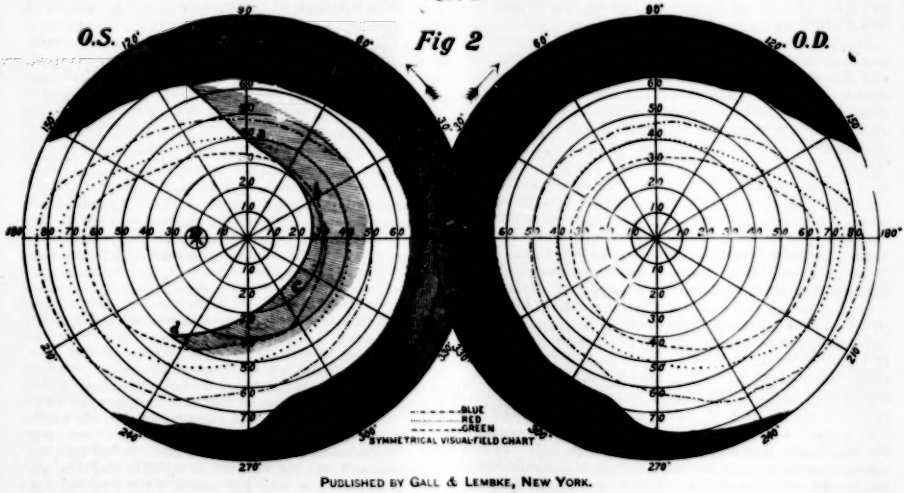
The writer published in the Transactions of the American Ophthalmological Society* 1,000 cases of astigmatism with regard to the position of the meridians, and in the Transactions of the Ninth International Ophthalmological Congress at Utrecht† 1,473 cases more, the statistics of which were: 1, in 78 per cent. the meridians were symmetrically placed, in 22 per cent., asymmetrically; 2, the vertical meridian had the strongest curve in 56.5 per cent.; next in frequency came the horizontal, with 10.3 per cent.; 3, in the intermediary positions the strongest meridian inclined to the nasal side about twice as often as to the temple. Similar observations being in accord with these statements, and being well known, we need not go into further details.

Now, which will be the best mode of recording the results of our examinations of astigmatic eyes? Snellen and other leading oculists use and recommend to take the vertical median plane of each eye as the basis from which to proceed, because it is parallel to the median plane of the body. Starting from the upper end of the vertical meridian, counting on both sides from zero down to the horizontal meridian, they call the degrees on the medial side plus, those on the lateral minus. I have used this system long, and proposed its adoption at the Seventh International Ophthalmological Congress at Heidelberg in the year 1888, and at the American Ophthalmological Society in 1892, only replacing the plus and minus signs by the indices n (nasal) and t (temporal), which Snellen (see preface to the last edition of his test-types, 1902) is willing to substitute for the plus and minus signs that require an explanation and readily lead to clerical errors.

At the Seventh International Ophthalmological Congress at Heidelberg in 1888 I recommended a second system of notation of the meridians and the field of vision as equally suitable, namely, to begin at the nasal



SYMMETRICAL ASTIGMATISM CHART.
PUBLISHED BY GALL & LEMBKE, NEW YORK.
Figure 1.



PUBLISHED BY GALL & LEMBKE, NEW YORK.

O. S. Blind spot: me 180, pa 20. Glaucoma: a — me 90, pa 40; b — me 30, pa 29; c — me 325, pa 23; d — me 236, pa 50.

O. D. Green-field: me 0, pa 35; me 60, pa 32; me 120, pa 37; me 170, pa 60; me 180, pa 64; me 210, pa 60; me 242, pa 50; me 300, pa 40.

* Meeting of 1892, vol. vi, p. 308.
† Page 65.

end of both horizontal meridians, mark them 0°, and count upward and all around the circle until we return to 360°, coinciding with the starting point 0°. I said:* "If this system should be chosen I would accept it with pleasure. It is expedient, perspicuous, plain and precise. Clerical mistakes between + or n and — or t would not occur."

At the last International Ophthalmological Congress† I brought up this subject again in one of the general sessions with a view to establish a uniform designation of the meridians of the eye and the field of vision as well. I no longer advocated the vertical meridian as the basis, but recommended the second system, which I had declared as equally suitable at the Heidelberg congress, and which departs only slightly from the system most common in America, is in perfect harmony with the principle of symmetry, and our diagrams will read the same whether looked at from in front or from behind.

The American method has the disadvantage that it disregards the symmetry in the position of the meridians; for instance, of the temporal diagonal meridians the left is marked 45 degrees, the right 135. If we begin the count on the nasal end of each horizontal meridian both would be marked 135, as they should be, being identical.

In the system which I propose we have just as rational and convenient *a chart for the visual field* as for the meridians. The chart contains meridial and parallel circles all around. Any point, any defect of F., can be clearly designated by two numbers, that of the meridian and that of the degree of latitude, just as the mariner designates the position of his ship by the longitude and latitude on his charts. This can be put into the text of a written or printed report as well as the formulas for astigmatic spectacle glasses. Anyone that wants to map it out need only transfer to the chart the points of outline of the defect found by the examination. In our daily practice a cursory examination of the visual field is as indispensable as that of the acuteness of sight. Locating the blind spot gives us an angle of 20 degrees from the visual line as a basis for the diagram in our case book. Whenever a more accurate determination is important, the perimeter and the chart book are always at hand. The points in the upper half of the field of vision are designated by the crossing of points of the meridians from 0 to 180 and the respective parallels, the points in the lower half by the meridians from 180 to 360, i. e., 0 and the respective parallels; for instance, the blind spot X is located at me 180°, pa 20°. If we abridge meridian into *me*, and degree of latitude into *pa*, we can easily mark down the outlines of any line or figure in the visual field. See the notation at figure 2. In noting the crossing points the letters *me* and *pa* may also be omitted, it being understood that the first number of each pair of degrees always refers to the meridian, the second to the parallel; for instance, 190°, 30° = me 190°, pa 30°, means the crossing point of the 190th meridian with the 30th parallel.

As far as I have given this subject thought and action, the proposition which I made as my second choice at Heidelberg, as my first choice at Utrecht, and, in a more elaborate shape now make before you, gentlemen, is, to my mind, the best among the many that have been tried. It rests on a scientific basis, is of easy application and meets the requirements of our daily practice as well as—personally, I should say better than—any other. Will it have a sufficient advantage over the one that has been in use in America almost generally for so many years? I think it will. I hold myself partially responsible for the customary—call it the American—system. Shortly after I had made this country my home (in October, 1868) the late Dr. Henry D. Noyes of New York came to me with the question: "What manner of designating the meridians would you consider the best for us to adopt?" I told him the one which physicists generally use and Helmholtz has followed in the chapter on the movements of the eyes in his "Physiological Optics," viz.: "Start from your left side and proceed to your right as the hands of the clock." Dr. Noyes asked no more. I find he had described this system at the Fifth Annual Meeting of the American Ophthalmologic Society, July 21, 1868.[1] From that time the method began to spread in this country.

The American method is best adapted for problems of motility where the requirements of single vision demand harmony in our motions as if the two eyes were blended into one. The problem before us, however, is merely optical, its solution rests on immutable anatomic conditions in the investigation and appreciation of which the symmetrical position of the meridians is the controlling principle.

The change from the old system into the new would be simple. 1. It will require a new plate on the spectacle frame for the left eye, placing zero on the nasal and 180 degrees on the temporal side. 2. A diagram of the prescription with the same change for the optician marked: symmetrical notation, to distinguish it from the customary notation, which may be called homonymous. 3. Perimeter charts marked symmetrically, i. e., zero at the nasal end of both horizontal meridians. Counting the meridians from the inner canthus up, along the brow, temple and cheek to 360 degrees or zero at the inner canthus. When these changes are made there will be no confusion and we shall be accustomed to the new system in less than a week.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—I am not unmindful of Dr. Knapp's courtesy in requesting me to open the discussion. I am impressed by this all the more by the fact that on a former occasion I was not convinced of the greater value of the methods he has advocated than the one in general use in this country and felt it my duty at that time to oppose the adoption of the first plan now again suggested in this able paper. It was then a cause for profound regret that I could not agree with the conclusions reached by one whose life has been one of singular and untiring devotion to scientific medicine and whose labors have in such preëminent degree enriched our knowledge and proved a constant source of instruction in the art of ophthalmic surgery. After a careful reading of the paper, which with great kindness was placed in my hands for study, I am still unable to see any sufficient reason to abandon the methods employed for the past thirty years, and confuse the records which have been made by the adoption of a new, unless an unquestionably better and more scientific method.

In 1893 this subject was brought before the Ophthalmic Section of the College of Physicians of Philadelphia in a paper presented by Dr. George C. Harlan, in which the many attempts which had been made to reach uniformity were set forth. The resulting discussion revealed much diversity of opinion and resulted in the appointment of a committee consisting of Dr. George C. Harlan, Dr. William Thomson and myself. Drs. Thomson and Harlan reported in favor of a plan similar to the second one suggested by Dr. Knapp, viz., that zero should be at the nasal end of the horizontal meridian

* See Bericht 7. Internat. ophthal. Congresses, p. 428. Wiesbaden. 1888.

† The Ninth, at Utrecht, 1899.

1. See Transactions Am. Ophthalmological Society, vol. 1, Fifth Annual Meeting, "Observations on Astigmatism," p. 29.

of each eye. I then felt it incumbent upon me to urge the retention of our present method and set forth my reasons in a minority report, which I now present, since it still expresses my views.

Before abandoning the method with which we are familiar, and which is in almost universal use in this country, we should carefully consider its advantages and scrutinize the objections that have been urged against it. In the first place, it is not only the established and well-understood method in this country, but is based on principles with which we have been familiar since our earliest school days, and is intimately embodied in the work and records of all scientific investigation, where the circle is a rudimentary factor in the process employed. In our first introduction to mathematical studies we found on the protractor the left hand end of the horizontal line designated as zero and the degrees of linear development on the arc of the circle counted upward by right ascension after the manner of the astronomer. The same method has been from the earliest times employed in graduating the quadrant, sextant, and the meridians as employed by the geographer and astronomer, and more recently on the perimeter and the ophthalmometer. In a word, in all the sciences where the circle is introduced the eastern, or left hand end of the horizontal line has been adopted as the starting-point and the degrees counted upward by right ascension to the zenith. This method is indissolubly joined to the records of the mathematical sciences, and is readily understood by all. When direction is given to place the axis of a cylinder at, e. g., 30 degrees, no reference being had to spectacles, there is not an optician in the world who would not place it as desired, since it would be plainly indicated on the protractor. No one outside the realm of ophthalmology would ever think of getting behind the protractor, and thus reversing the angle. We should, therefore, hesitate before we divorce our ophthalmological records from a method employed universally among scientific men laboring in other fields.

If we adopt the median line of the face as zero, we not only separate ourselves from this universally understood method of estimating and noting degrees upon a circle, but it will be necessary to keep in mind a right and left ascension and we can never be sure that it will be understood without explanation, except by the initiated. In my judgment this will introduce complexity. In place of conceiving under all circumstances a development upon the circle from left to right, we shall be compelled to conceive a development from right to left for the patient's right eye, and left to right for the left eye.

The real cause of confusion, if any, in the system we now employ, is in referring the angles of deviation to the respective eyes of the patient, whereas it should, as in other things, be compared to the horizon line. Personally, I have not found difficulty in doing this, i. e., in viewing the angle from the standpoint of my patient. This presents no more difficulty than in differentiating between the patient's right and left eye, examining them from the front as we usually do, the right eye being opposed to our left. This process of orientation is one we must perform in many details of life. With regard to the symmetrical placing of the meridians in the two eyes, etc., I can see no practical advantage in referring them to the median line of the face, that does not obtain equally for the universal horizontal line.

As regards symmetry and asymmetry of the corneal meridians in astigmatism, our present system has an advantage in another respect. It will be found that in all symmetrically arranged meridians the total for the two eyes will be 180 degrees, e. g., both axes at 90 degrees equals 180 degrees. Each incline from the vertical 15 degrees would place the axis of the correcting cylinder at 105 degrees in one eye and 75 degrees in the other, equal 180 degrees, at 45 degrees and 135 degrees, equal 180 degrees, etc. In any case where their sum is not 180 degrees we have asymmetrical meridians.

DR. EDWARD JACKSON, Denver—The symmetry of the principal meridians of astigmatism is so constant that I can not conceive of any one working practically at the refraction of the eye without very quickly learning some way of immediately determining whether meridians are symmetrical or asymmetrical. To one, as I understand Dr. Knapp has done, who uses the system of notation in which symmetry is recognized by identity of numbering, it may not at once occur that it can be recognized without identity of numbering, in such a way as Dr. Risley has just referred to, e. g., by simply associating in the mind 105 and 75 degrees, or 45 and 135 degrees, etc.; as every one must have done who works with the so-called American system. Most of us, I think, are not conscious of any obstacle in this; and those of us who have learned to use the American system would for a long time find the change a greater obstacle. So much for the designation of the meridians of astigmatism. The Doctor has also touched upon the designation of the field of vision and of the ocular muscles. We must have same system of notation for both of these purposes and the ordinary system seems almost essential for designating the movements of the eye. Its advantages are very obvious. For designating the field of vision there occur to me certain advantages in the American method worth alluding to. The visual apparatus exhibits throughout a bilateral symmetry. But at the chiasm the significance of the symmetry changes; and that change is important with reference to the designation of the field of vision. Lesions behind the chiasm causing homonomous hemianopsia give rise to the large majority of defects which involve the fields of vision for both eyes, and requiring some comparison the one with the other. Now the two fields as charted in a case of homonomous defect do appear exactly similar in shape. Yet, if we compare it by meridians, the extent of the field, say at 15 degrees for the right and left fields, any defect has precisely the same significance for the two eyes. For homonomous hemianopsia we have an advantage in the present system. Then, in making any change of this kind it is important to consider the methods used in other branches of science. Dr. Risley has alluded to the universal use of our "American" system in other branches of scientific work. But if we go beyond that and consider the value of certain other very arbitrary systems we are struck by their universal use. Take the ten digits, for example; few things could be more arbitrary, and yet see how they are used. If there is anything more widely used than that, it is our still more arbitrary alphabet. The general tendency is to get some one basis and use it in many departments of life; and with us it seems to me that we will do best to continue using a system adapted to other departments of science as well as our own.

DR. SWAN M. BURNETT, Washington—At the outset I am compelled to withhold my acceptance of the thesis advanced by my honored master in ophthalmology, Prof. Knapp, that the visual apparatus in man is a dual organ, in the same sense that the hands are, for instance. On the contrary, in my opinion both the anatomic structure and the physiologic function of the apparatus point to the necessity of its being considered as a single, or cyclopean eye. The right side of the brain presides over the right half of this eye—the right side of both globes—and the left side of the brain presides over the left half of this eye—the left side of both globes. Moreover, in consonance with this, the synchronous action of the external muscles of the two eyes with their appropriate centers of coördination, move these corresponding halves simultaneously in a manner necessary for maintaining this relation. Whenever they are not moved in this manner, together, we have well-recognized pathologic states. Single vision with the two eyes is possible only by this association of the corresponding halves of the two globes as a physiologic unit. The objective aim in the treatment of a very large number of cases is to maintain the physiologic identity of the corresponding halves of the two globes made essential by the existence of the cyclopean eye.

We must, then, consider the visual apparatus from a physiologic point of view, as one eye with a right and left side. In pathologic states, as shown in affections of the visual field due to lesions behind the chiasm, the same law holds—a lesion on the right side affecting only the right side of the two eyes, one on the left side affecting only the left half of the two eyes. The symmetry of the visual apparatus, there-

fore, does not consist in the relations, nasal and temporal, of each globe separately to a vertical plane, but in the relations of this single eye to a single plane—the horizontal. In other words, the cyclopean eye has no nasal or temporal side, but only a right and a left side. In such a badly-constructed piece of mechanism as the human body, where asymmetry in a greater or less degree may be considered the rule rather than the exception, it could hardly be expected that the refracting media of the visual apparatus should wholly escape, especially as it involves two separate and distinct structures, the cornea and lens. The special kind of asymmetry with which we have now to deal is astigmatism. There is one well-recognized form of this, so common as to be considered almost a normal condition, and has for this reason been designated "according to the rule." Here the vertical meridian is more strongly refracting than the horizontal. The reverse of this, with the horizontal meridian more strongly refracting, is next in order of frequency. Both, however, conform strictly to the demands of the cyclopean eye. All other irregularities in the position of the principal meridians conform to no general law, and we must from a scientific standpoint consider them as aberrant.

In order to determine how far this law holds good in actual application, I examined two series of cases of astigmatism, of a hundred each, taken in succession, but at different periods as to dates, from my case-books. In these the percentages were quite closely the same for the two series, that is, in about 50 per cent. the two meridians were horizontal and vertical, "according to the rule"; in 15 per cent. the relation was the reverse of this, sometimes called "contrary to the rule"; about 5 per cent. had an astigmatism with the rule in one eye and inversely in the other; and, in about 30 per cent. the meridians were oblique in one or both eyes. Of the cases with oblique meridians in both eyes, there were in the first hundred, 9 with the axes nasal or temporal in both eyes, but of these only 2 had exactly the same degree of deviation from the vertical; in the second hundred, 14 were nasal or temporal in both, with only 3 of the same degree in each eye. On the other hand, in the first hundred there were 2 with both axes inclined either to the right or left, and in the second hundred there were 5 so inclined. Of the remaining there were in the first hundred 18 with an oblique axis in one eye only, and in the second hundred 11 were so situated.

If these statistics are to be taken as any indication, and I regard them as fairly representative, we must regard as the normal asymmetry of the visual apparatus, one in which the two principal meridians are horizontal and vertical, this being the condition as found in about 70 per cent. of the cases of astigmatism. This also conforms fully to the requirements of the cyclopean eye. In the remaining 30 per cent. there seems to be no deviation of such regularity and frequency to establish it as a law. It is true that in 9 and 14 cases, respectively, in the two hundreds the axes were inclined in each of the two eyes to the nasal or temporal side, but in only 2 and 3 cases to the same degree, while they were inclined to the same side, right or left, in both eyes, in 3 and 5 cases. In the larger number of cases, that is, 18 and 11, in the two hundreds, there was an oblique axis in one eye only. If there were a law of symmetry of obliquity we should expect, if there were an inclination of the axis in one eye, to find a corresponding inclination in the other. I can not, therefore, consider it justifiable, or strictly scientific, to take any single aberration from what appears to be the physiological state as a basis for the establishment of a law and for the inauguration of a new system of notation. The two systems of this kind which have been advocated are: first, the adoption of the vertical meridian as a point of departure, and counting to the nasal and temporal sides of each eye to 90 on the horizontal. This I consider not only unscientific, since it is out of keeping with any manner of notation of degrees employed in scientific work, and not in harmony with the idea of a cyclopean eye, since it divides the eyes into four separate and distinct parts, but is needlessly complicated in its practical application. Second, the method now brought forward by Prof. Knapp, in which the numbering begins at the nasal side of each eye and goes on continuously to 180 on the temporal side, 90 degrees being the vertical in both eyes. To this method less objection should be made, practically, than to the other, for it is simpler, easier to use, and the liability to confusion is less. The objection from a scientific standpoint is, however, the same. It does not conform to the idea of a cyclopean eye, but divides the visual apparatus into two lateral halves, for which we can find no warrant either in physiology or pathology of the visual organ. Neither can I see any practical advantage. You have two semi-circles with the gradation running in opposite directions, which is not in accordance with the use of the protractor in any other branch of scientific work.

This question is not a new one, as you are aware. In 1885, or thereabouts, a good deal was said about it in Europe, and the vertical meridian was strongly advocated by many as the point of departure for numbering. In 1887 I sent a communication to the *Annals d'Oculistique*[1] strongly upholding what has since become known as the American system, from its almost universal use in this country. In taking only one semi-circle, commencing with zero at the left hand and going on to the right as the hands of the clock move, to 180, for both eyes, we are committed to no law of aberration, use a strictly scientific method and have only one direction to hold in the mind in the reading of the position of the axes. Nothing could be simpler, nothing more efficient, as it conforms fully to the requirements of the ideal cyclopean eye. I can see no just grounds for abandoning it for one which possesses none of these advantages, but has considerable disadvantages of its own.

DR. JOHN E. WEEKS, New York—I want to protest against the idea of starting out in the refraction of an eye with the belief that symmetry exists in the sense in which it has been spoken of here to-day. I agree with Dr. Burnett, that we must regard the eye as a single organ. I have been brought to this belief by the examination of the cases coming to my office. I looked over the cases seen in my office in one half of the year 1901 and found that they numbered 473, and that of these cases only 56 presented the condition of symmetry. In 275 cases there was asymmetry, in 92 astigmatism of one eye only, and in 50 no astigmatism. I believe that if a man starts out with a preconceived idea that he is going to find a thing, he is very apt to find it, whether it exists or not, and my position is simply one of caution, that is, to urge the commencing of an examination without any preconceived idea of what you are going to find.

DR. KNAPP, in closing—As to Dr. Weeks' remarks, I did not start out with the preconceived idea of finding astigmatism. The idea was forced on me, as it will be on any one who examines the eye. It was not until 1857 that by measuring the eye this imperfection was found, and it was that which explained why cylindrical glasses improved sight. The man who in 1857 at the German Ophthalmological Society at Heidelberg brought out that idea was your humble servant, and the man who opposed it was Donders.

Dr. Risley has said that in symmetrically arranged meridians if the axis is 105 in one eye it will be 75 in the other; why not denote these identical meridians with the same number?

As to the field of vision, there is no mode of describing or recording it in letters and numbers simply and correctly that I know of. Authors say a foreign body is so far up or down, or so far away from the papilla, etc., while with the method I propose we can go all the way around and put the location down definitely. It always is at the crossing point of a meridian with a parallel.

With regard to the mechanism of the motions of the eye, both eyes act together as one, "the cyclopean eye," but I do not see what the cyclopean eye has to do with a description of the anatomic conditions of each eye, the abnormities of which, with the differences between the two, we have to find out, to preserve in our records, to send to the optician to grind glasses to order, which correct these abnormities, and to send to the press. Is it not desirable to have for these descriptions of our daily work the simplest, the most correct, the most scientific expression, to be understood at sight all the world over?

1. Apropos de la notation uniforme et internationale de l'astigtisme.—Annals d'Oculistique, T. 98, p. 166.

AMEBIC DYSENTERY IN MICHIGAN.*

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The recording of a single case of amebic dysentery can be justified only by particular circumstances. In this case the geographic source of the infection is my chief reason, a secondary cause being the desire to emphasize the need of further work in this class of cases.

THE CASE IN POINT.

History.—H. S., farmer, 30 years old, was admitted to the medical clinic of the University Hospital, Ann Arbor, Dec. 6, 1901, on account of frequent loose stools, containing blood and mucus, pain in the abdomen, tenesmus and loss of weight and strength. The family history is negative. With the exception of chicken-pox, measles and diphtheria in childhood, the patient has always been well up to the present illness and continued his work until the day of admission. He states that his food and eating habits have always been good; does not use alcoholics. Drinks well water, the well being 24 feet deep, 100 feet from the barn, free from contaminations and the water considered unusually good. He does not remember having used other water within a recent period. Has not been out of the state since 1893, when he was in Chicago for a short time.

Present Disease.—The present disease began in August, 1901, with a griping pain in the lower abdomen. The stools soon became thin and watery. Bearing-down followed evacuation. There have usually been from six to twelve stools a day, sometimes as many as twenty. The stools have sometimes contained blood and mucus, but not always. They are often very small. Thinks he has not been free from diarrhea more than a day at a time since the disease began. He took treatment, the details of which are not known, but was not relieved; he grew weaker and lost about fifteen pounds in weight. The patient has no other subjective symptoms than those noted.

Examination.—Frame of medium size; muscles fairly well preserved, panniculus thin. Appearance not very ill; mind clear. Skin pale; no edema; tongue pale, faintly marked by teeth, thin white coat, otherwise negative. Examination of lungs negative. Heart negative, except soft systolic murmur in pulmonary area.

Abdomen: About an inch below level of ribs, slight fulness below and to left of umbilicus. Palpation shows a cylindric mass about an inch in diameter in this region; percussion over it tympanitic. No visible peristalsis. Examination of other parts of abdomen and spleen and liver regions negative.

Examination of rectum reveals blood-stains about the anus, a bloody and purulent fluid in the rectum. The mucous membrane of the rectum shows a number of small irregular, slightly elevated gray patches with red margins. The gray coat is very thin and can not be removed by mopping with cotton. Two thick and reddened valves can be seen.

The urine for 24 hours amounts to 700 c.c. sp. gr. 1025. Chemical and microscopic examination negative. The blood shows 4,730,000 red cells, 10,441 leucocytes per c.mm., hemoglobin 90 per cent.

A small quantity of reddish mucus was brought to me in the laboratory when the first rectal examination was made. The appearance of this was so characteristic of amebic enteritis that I mentioned the fact. At the first glance through the microscope, at a fresh drop, large numbers of Charcot's crystals were seen, and among these were several large and active amebæ, containing red blood corpuscles. The patient remained in the hospital three weeks. In this time the stools, the liquid, obtained through a speculum, from the rectum and the material adhering to a rectal tube, usually contained mucus, blood corpuscles, leucocytes, Charcot's crystals and amebæ. Sometimes there were small masses of columnar cells, or very small superficial sloughs. Eosinophile cells were rather numerous in the stools. (10 per cent. eosinophiles in the blood.)

The Amebæ.—The amebæ presented the same characteristics of size, refraction, inclusions and motion as those I reported in 1891, in Texas, and others that I have seen in dysenteric cases in other places. In the present case I measured a number of the parasites, alive, when as nearly round as possible. They ranged most frequently between 20 and 35 microns. The largest one was 38 microns. Not many were less than 20 microns. They usually contained red blood corpuscles, sometimes being as if stuffed full. The nucleus could occasionally be made out. In some cases there were highly refracting, somewhat greenish vesicles which at times showed changes of shape and size. The stools were usually soft, sometimes watery, generally small but sometimes amounting to 200 or 300 c.c. The amebæ were only found in the mucus or small sloughs.*

The number of stools was from three to ten daily, except on one day, when there was only one. The odor was more offensive in the beginning than I had usually found it in amebic dysentery. The fecal part contained many bacteria, as usual. After ten days' treatment soft, partly formed stools appeared, without mucus, with few blood-streaks, and containing Charcot crystals but no recognizable amebæ. At this time, as there was a tendency to constipation, a dose of Carlsbad salts was given. This was followed by several watery stools. In a small bit of mucus in the second stool hundreds of active amebæ were found. The superficial diphtheritic patches in the rectum cleared up quickly, but left two superficial ulcers, not undermined. These quickly healed, and by the end of two weeks the mucous membrane was less red and swollen. The thickening in the left side disappeared. The rectal tube caused much less pain than at first. The mass in the left side of the abdomen gradually disappeared. The temperature reached 100.4 the day of admission, but then fell and after the third day never exceeded 99 F.

Treatment.—This consisted chiefly in the use of quinin enemata. This was given at first in quantities of 500 c.c., all the patient could take, of one to one thousand solution. The patient retained this for one to three hours usually. Later he took 2000 c.c. of 1:2000 solution. The amebæ continued active all the time and no marked evidence of improvement could be seen in the other elements of the stools, except that the feces became slightly more consistent. Later, benzozone was given by the mouth in quantities of 1500 to 2000 c.c. of the 1:1000 solution daily. At this time we were not aware of the best method of preparing the solution, and made it up fresh every morning. There was no effect on the activity of the amebæ. The stock of benzozone then gave out and could not be renewed in time to give a more thorough trial. The patient gained 3½ pounds while in the hospital. He was then obliged to go home, where he continued the quinin enemata for three months, keeping a record of his stools and other data and reporting at intervals. He steadily gained weight and had only one or two stools a day. Stools passed in the laboratory on his visits always contained live amebæ, though the stools had partly lost their dysenteric character. March 28 he was put on sublimed sulphur, 20 gr. t.i.d. During the next month he remained about the same. Blood and mucus occasionally appeared with the stools, but the stools were less fluid. Amebæ were always to be found. After a month, April 29, he was put on 10-grain doses of sulphur four times a day. In the three weeks after that he felt better than at any time since the disease began. He had one or two stools a day and amebæ could be found in only small numbers, in minute bits of mucus.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank A. Jones, George Dock and J. M. Anders.

* The patient's blood serum was tested with a culture of the Shiga bacillus kindly sent by Prof. Flexner, but did not cause agglutination. Cultures of the stools were negative so far as the specific bacillus was concerned. These observations, as well as injections in cats and other studies, were made by Dr. W. E. Griffin, who was obliged to interrupt the work in order to appear before the Naval examining board, and being ordered to report for duty soon after, his investigations were abandoned. I have to thank him and my assistant, Dr. D. S. Grim, for many of the notes made on this case.

RARITY OF THE CASE.

From the facts detailed there is no doubt the case is one of amebic dysentery. It is the first one I have seen or heard of in Michigan, and as the local origin can hardly be doubted, is of particular interest. "Dysentery" is frequently reported in Michigan, according to the reports of the State Board of Health, but very little has been written on its occurrence here, judging from the scanty references in the Surgeon-General's index catalogue and in periodic medical literature. I have not been able to see an epidemic. Many cases diagnosed as dysentery have been sent to my clinic, and I have seen others in consultation. None had histories closely resembling any of the clinical forms of amebic enteritis, and the conditions of the stools were in general not like those of acute dysentery or of the chronic amebic form. Most cases were chronic diarrheas secondary to disease of the stomach or to acute enteritis. Some were diarrheas of pernicious anemia and autopsies on some of these cases showed no characteristic lesion in the intestines. Others could be classed clinically as catarrhal dysentery, and in one of the most severe of these, seen with Dr. George W. Palmer of Chelsea, with perforation and abscess pointing in the femoral region, there were extensive superficial ulcers in the colon, altogether different from those in amebic cases. Perhaps some of the dysenteric cases reported in Michigan belong to the specific bacillary form, the relations of which have been so admirably worked up by Dr. Flexner, but the existing reports do not enable one to be certain of that.

THE DIAGNOSIS.

Although the *Ameba coli* is a very striking object in its characteristic motion, those who have not seen it are likely to mistake for it various kinds of cells in stools. A number of these have been shown me in my laboratory by otherwise competent microscopists. The most puzzling things for the inexperienced observer are large epithelioid cells with violent protoplasmic motion in the body and with consequent movements in the sides. If one waits for the occurrence of true ameboid motion before making a diagnosis all such errors can easily be avoided, and if the stools are examined fresh, or what is often better, material obtained by passing a rectal tube, and the bits of mucus picked out, amebæ can easily be found if they are present.

HISTORY OF AMEBIC INVESTIGATION.

The finding of such a case as the one now reported recalls many interesting facts in the history of dysentery and of the amebæ found in stools. Although amebic dysentery was early looked upon as the dysentery of the tropics, largely owing to Kartulis' epoch-making observations and the striking relation of amebæ to "tropical" liver abscesses, it could not be forgotten that the parasites were first recognized in St. Petersburg (aside from the less important observations of Lambl, Lewis and Cunningham), and in chronic dysentery. I claimed, in a paper accepted for publication in October, 1890, but not printed until the next year, that ameba coli was probably a parasite having a world-wide distribution. The anatomic investigations of Councilman and Lafleur, the most important in many respects hitherto made in intestinal disease, and the discovery of the ameba in such different parts of the country as Baltimore, Texas, Philadelphia, Cincinnati, Chicago, Boston, Cleveland and Atlanta tended to fix the anatomic and geographic, as well as the clinical features of the disease. Owing to the difficulties in the way of assigning the exact etiologic relations of the amebæ, the observations just mentioned would have been of less value had it not been for discoveries in acute dysentery, both in and outside the tropics. The observations in these cases began as early as the most important ones in amebic dysentery, and culminating in the demonstrations of Shiga and Flexner, distinguish a very important group of cases, and enable us to study more accurately the nature of diseases belonging to the class of dysentery wherever found. At the same time, they have not lessened the diagnostic importance of *Ameba coli* nor made the need of further study of that parasite less imperative. On the contrary, they throw in a stronger light the close relation of the animal parasite to certain widespread, clinically important, and therapeutically difficult intestinal diseases. We must still learn the exact relation of the ameba coli to dysentery and intestinal ulceration, not to mention the remoter complications in the liver and thoracic organs. We can not as yet say whether the amebæ begin the anatomic alterations by themselves, or in association with bacteria introduced or normally living in the intestine, or whether they are nosoparasites, finding favorable seats for growth in lesions caused by other germs. That their association is purely accidental becomes less and less probable with the accumulation of data regarding the peculiarities of the intestinal changes. Direct and unequivocal proof, as by inoculation, is still lacking, and, from the difficulties in the way of cultivating amebæ, seems almost impossible. The results following the injection of material containing amebæ into the rectums of animals are not free from sources of error and have been contradictory in the hands of various investigators. The most important results are those of Dr. H. F. Harris, and, though they require confirmation, they deserve more attention than has hitherto been paid them. Harris[1] cultivated all the bacteria from dysenteric stools, but though he was unable to produce proctitis or colitis by injecting the cultures in animals, he succeeded (in young dogs) with the stools containing amebæ, even causing liver abscess, with amebæ. However, these experiments were few, and in view of the fact that Gasser produced colitis in cats by injections of garden earth, Sorgo with non-amebic dysenteric dejections, and also the fact that the previous observers have usually produced lesions not identical with those in human amebic enteritis, we must await further observations.

OPINIONS OF AUTHORS ON THE AMEBA.

The occurrence of amebæ in the stools of persons apparently well, or in those of patients with cholera or other diseases, or in the feces of lower animals, can not be considered proof that the amebæ found in dysentery have no pathogenic relation. I published an observation in 1891 showing the presence of severe ulceration in the cecum, with amebæ, in a patient without history of dysentery and with normal stools. Kruse and Pasquale pointed out very early that it was not necessary to assume the existence of two varieties, pathogenic and non-pathogenic, since the differences observed might be due to variations of disposition on the part of the host. On the other hand, our imperfect knowledge of amebæ in general, and the difficulties of distinguishing species or varieties make it highly probable that there are different kinds with different pathogenic characters.

Observations showing the occurrence of amebæ in healthy men have been much used, as mentioned above, to disprove the possible causal relation of amebæ coli, and those of Schuberg have been reiterated over and over again, and often as if they were typical of the conditions in all parts of the world. Schuberg, in brief,

1. Virchow's Archiv. Bd. 166, p. 67.

gave laxatives to persons without evidences of intestinal diseases. In the examination of "about twenty stools," he found amebæ in "about the half," "sometimes in tolerable numbers." He thought it "probable that amebæ (and flagellates, which he also found in his cases) occur as commensals in the human intestine extraordinarily frequently if not regularly."

In the first place, it may be remarked that Schuberg's conclusions hardly fit his observations; in the second place, that even if a certain parasite occurred in every case in one locality, it would not follow that the same parasite would also be found as widespread elsewhere. The observations of many early workers were opposed to those of Schuberg, also many later investigations, such as those of Janowski in Warsaw and Strong in Manila. The latter found amebæ in only eight out of two hundred cases treated with Carlsbad salts. The most recent investigator in this field, Zorn[2] in Munich, also had negative results.

My own early control observations were so different from Schuberg's[3] that at once after reading his article I began some investigations, giving Carlsbad salts in dose of one-half to one ounce, to all patients who had no contra-indication, and examining the stools as soon after they were passed as possible. More than two hundred such cases were examined, when I discontinued the routine examinations, but I have since then examined many other cases in the same way. In no case, except the one now reported and another to be mentioned below, were amebæ found. Flagellates, such as Schuberg also found in his small series of cases, I found six times in the first two hundred cases, and several times since then, but only in cases of diarrhea, never in persons with previously normal stools.

The exceptional case was one of ulcerated cancer of the rectum with diarrhea. On two occasions amebæ were found in the stools. The parasites were smaller than those I had previously seen in dysentery in Texas, the largest measuring 20 mm.; they contained no red blood corpuscles and, in fact, very few inclusions of any kind. They had a more marked tendency to travel in one direction than is common in ameba coli, and less ameboid motion.

From these observations I think it can be assumed that amebæ are not present in "about one-half" of all normal intestines, in all parts of the world. The determination of the intestinal fauna in various localities may aid in clearing up the etiology of intestinal disease and its comparative neglect is difficult to explain.

But, admitting that there are different varieties of amebæ that may infest the intestine, the question remains to be answered whether they can be distinguished other than by the effects of inoculation in animals which, as we have seen, are not altogether conclusive.

NOMENCLATURE OF VARIETIES OF AMEBAE.

The difference in size of the amebæ in my case of cancer of the rectum as compared with those in dysentery is very striking, but in other cases the matter of size has not been so easy to use. In the literature there are certain contradictory observations and the subject has been still further confused by premature efforts at nomenclature. Future investigators should avoid adding to this, but should endeavor to clear up the present contradictions. When Loesch gave the name *Ameba coli* to the organism he found he did not define the specific characters with sufficient fullness, though he did as well as the existing knowledge of protozoa permitted. Councilman and Lafleur, in giving a new name, *Ameba dysenteriæ*, without adding to the zoologic knowledge of the parasite, hardly realized the needlessness of such an innovation. The fact that so eminent an authority in zoology as Blanchard had already suggested still another name, *Ameba intestinalis*, also without greater definiteness, was an unfortunate example, but not a justification. Quincke and Roos attempted a more scientific nomenclature when they made three varieties of intestinal amebæ, *Ameba coli Loesch, sive felis*, characterized by being pathogenic for man and cats, *A. coli mitis*, mildly pathogenic for men but not for cats, and *A. intestini vulgaris*, non-pathogenic. Unfortunately, there are discrepancies or contradictions between their further description of the different varieties and the descriptions of most other investigators. Quincke and Roos described *A. coli felis* as being small, 15-25 microns in diameter and without blood corpuscles. The size of the amebæ in dysentery varies considerably according to different observers: Kartulis, 12-30 microns; Lafleur, 6-35 microns; Osler, 10-20 microns; Kruse and Pasquale, 10-50 microns; Craig, 5-35 microns, most frequently 15-25 microns. Though large amebæ seem to have been more frequently noticed than small ones in tropical cases, this has not been uniformly so and some severe cases in temperate regions have shown small amebæ with red corpuscles, those found by Zorn in Munich (1 case) measuring 14-22 microns, or about the same size as in the Cicilian case of Quincke and Roos. One of the most recent, as well as one of the most competent students of dysentery, Strong, goes so far as to believe that small amebæ found in dysenteric cases are non-dysenteric, but in giving these the name *Ameba coli*, the larger forms that of *A. dysenteriæ*, he does not seem to have proved his right to act as a sponsor any more than did Roos.

The matter of inclusion of red blood corpuscles, which has been used as a partial diagnostic feature, is still somewhat uncertain. Roemer[4] thought the presence or absence of blood corpuscles accidental, depending on the presence of blood in the intestinal contents. Sorgo[5] saw the amebæ become free from blood corpuscles, though there was still blood in the stools, in cats. In my case of cancer with small amebæ, there were no blood-inclusions, but there was very little blood in the stools at that time. The point is one that should be capable of experimental proof, and may be of more value than it now seems.

In conclusion, I wish to add that in view of the rapid advances made in our knowledge of acute dysentery in the United States, largely by Flexner and his pupils, and the fundamental work done in chronic dysentery by Councilman and Lafleur, it seems as if the inviting field offered by the study of the amebic form should attract more workers in this country than has been the case.

DISCUSSION.

DR. THOMAS MCCRAE, Baltimore—The paper just read is of special interest in reference to the question asked in Baltimore whether or not amebic dysentery is traveling northward. Several years ago one of these cases was admitted in Dr. Osler's ward, the patient never having been out of the state of Maryland and at that time this was contrary to the opinion expressed that practically all cases came from further south. Since then, however, there have appeared many cases that have never been out of the state of Maryland, where the disease is not infrequent. A point of especial interest,

2. Deutsches Archiv für klin. Med., Bd. 72, p. 366.
3. Centralblatt für Bakteriologie und Parasitenkunde, Bd. 13, 1893.
4. Münchener med. Woch., 1898, No. 41.
5. Wiener klin. Wochenschrift, 1897, No. 18

recently observed, is that an increasing number of cases are to be found in children and it has been found that some of these have occurred in children who have become infected through drinking "gutter-water." The report made by Dr. Dock has been of special interest as going to prove the wider distribution of the disease in the north.

DR. JAMES J. WALSH, New York—During the past year at least two cases of true amebic dysentery have been reported in New York City. One of the patients had not been outside of New York City for years, the other had never been out of the city. It seems, therefore, that the ameba has crept as far north in its endemicity as New York City.

DR. E. LIBMAN, New York—At Mt. Sinai Hospital we have encountered a large number of cases of amebic liver abscess. During the past three years we have examined specimens from at last ten cases of this kind in which no history could be obtained of any residence outside of New York City.

DR. DOCK, in closing—I should have mentioned in my report that I excluded any possibility of infection from soldiers who returned from Cuba or the Philippines. Since the Cuban war there have been a number of cases of tropical infections from returned soldiers. In view of the wide spread of the disease, the vague symptoms that are present and the absence of the symptoms known as dysenteric, it is very important that all stools be examined more carefully than they have been in the past. Finding the organisms early gives a better basis for making a prognosis than anything else.

WHAT CASES OF PLACENTA PREVIA CAN BE BEST TREATED BY CESAREAN SECTION?*

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It is not my intention to go over the whole subject of placenta previa and the various methods of treatment, because this has been done so thoroughly in the past two years as to be unnecessary. It is worthy of remark, however, that the importance of this condition has been forcibly brought home to the profession by the advocates of Cesarean section, and the treatment of this serious condition has taken on new interest.

At the time when I reported[1] the first entirely successful Saenger-Cesarean section for placenta previa there was little on record of value regarding the frequency and mortality in the various forms of this complication. At that time I had delivered but one case with placenta previa, and that only partial, in which rupture of the membranes allowed the head to engage, and mother and child survived, but I had in mind other cases with less happy results. All the statistics, however, that were available emphasized the serious nature of certain forms of placenta previa. The study made at that time of the literature bore out the statement made "that this was the most fatal complication with which the obstetrician had to deal, and under the most favorable conditions (meaning by that the results of well-conducted lying-in-hospitals) and in the hands of experts, showed a higher death rate, fetal and maternal, than almost any other obstetrical condition." The statistics, it is true, as later writers[2] have stated, were old, but the obstetric teaching in regard to this subject was no more modern, at least, so far as treatment was concerned.

It is not necessary to go over the entire ground on which the resort to Cesarean section in certain cases was held justifiable, but a review of those indications in the light of subsequent additions to our knowledge of the subject, will be of interest.

The indications appeared to be as follows:

1. Cases of complete previa.
2. Cases of previa in primiparæ when signs of fetal or maternal exhaustion are evident.
3. When the condition of rigid os is present.
4. Where there is a history of previous operative delivery.
5. In transverse positions and in cases of prolapsed cord, if the cord is not easily returnable.

Advocating section for these conditions is far from advocating section for all cases of placenta previa, as my paper has been quoted. We should not proceed too fast in the advocacy of new treatment, and while the surgical invasion of the obstetric field has only begun, I do not believe that section will be accepted as a cure for all obstetric complications until we admit that the pains of normal labor should be accepted as indications for interference.

The paper read by Dr. Gillette[3] at the meeting last year was a notable contribution to our knowledge of this subject, and his statistics of mortalities show that the condition is still a serious one. His report of the results of 216 cases in the hands of various men show 34 mothers lost, or a death rate of 15 1/3 per cent., and 96 children, or 44 1/3 per cent. As to the variety of implantation, there were 88 cases of centralis, 20 mothers lost (22 8/11 per cent.); while 66 children were lost (70.5 per cent.). Of the other forms of implantation (partialis and marginalis), 128 were reported, with 14 deaths for the mothers, a death rate of 11 per cent., and 41 of the children, or a death rate of 31.5 per cent.

Shauta[4] in a recent article, while arguing against section, gives the following figures: Placenta previa centralis, 50 cases, with the death of 9 mothers (18 per cent.), and 35 children (70 per cent.), while in 184 cases of partial previa he lost 7 mothers (3.8 per cent.), and 92 children (50 per cent.). These statistics do not differ from those quoted in my original paper, of Jardine,[5] who (1896-8) reported 12 complete, with 16 2/3 per cent. maternal deaths and 66 2/3 per cent. fetal, except that they are enough higher to prove that it is even more fatal than we originally believed.

In primiparæ this condition can not be said to be so rare as not to require consideration, as it occurs in about one in eight cases of previa. Fry[6] in reporting 14 cases, reports 7 cases in primiparæ.

Reason would seem to indicate that operative interference in primiparæ must be slower and more difficult than in multiparæ, because of the firmness of the parts.

It has been said, however, that the os with placenta previa is more easily dilated than if normal. This statement, however, should be changed, for there have been cases enough reported and evidence enough adduced in the past two years, to warrant the statement that the os is more easily torn than normally, while doing manual dilation and extraction; in fact, there are many cases of spontaneous rupture of the uterus in the presence of placenta previa.[7 8]

Schultze,[9] in a discussion of uterine rupture, gives as a cause paralysis of the region of placental insertion. He refers to the fact that during pregnancy the uterine wall develops less in the portion where the placenta is attached than elsewhere, and that when the placenta is adherent, the portion of the uterine wall left after its separation is thin. Failure of this area to contract he terms paralysis of the area of placental insertion.

Anatomically no part of the uterus is more liable to rupture than the lower segment during labor, not only on account of the retraction of the muscular fibers of the uterus and the consequent thinning of the lower

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

segment, but to the causes of rupture as pointed out by Schultze. If spontaneous rupture is not uncommon, what may we expect with forcible dilatation and delivery?

The history of previous operative delivery in the case of a normal pregnancy has led men of great experience to advocate broadening the indication for section in cases with lesser degrees of pelvic contraction. The study of 1000 cases by Dobbins and Williams[10] shows most clearly the importance of a history of operative delivery in considering the treatment necessary in future pregnancies. These conclusions were: "that it is the border line of disproportion between fetal and pelvic diameter that we get the worst results for the fetus and it is the border line cases that are most frequent. First the fetus is shocked by severe forceps compression of the brain; then the heart is shocked by the manipulation of the cord necessary in version, and finally, if it still lives, it must run the gauntlet of asphyxiation." Admitting for the sake of discussion that many babies are small and not absolutely at full term, let me ask how a severe operative delivery helps a child already severely shocked and enfeebled?

In the past two years there is hardly a city in this country in which Cesarean section for some condition has not been performed, ranging from rigid os to eclampsia, and everyone is familiar with the ease and success of the operation. During the same time the number of craniotomies has grown steadily less, due not only to the improvement in surgery, but to the profession's awakened conscience.

When Dr. Ford[11] of St. Louis, in 1892, advocated Cesarean section in certain cases, on purely theoretical grounds, he did so when the death rate from most abdominal operations was still very high, but he was convinced that the do-nothing or the uncertain and indefinite methods then in use might be well superseded, in a large number of cases, by an operation which even then was promising the brilliant results it has since obtained. The most important point on which a resort to section was based was the fact, that we have to deal with two patients, and our whole duty is not conscienciously performed if we deliberately sacrifice or neglect the interests of the one in favor of the interests of the other. The discussions of the results obtained in the treatment of placenta previa which have been brought out in the past two years, are very important, for before that time the reports of large numbers of cases were few and in many instances combined old pre-antiseptic results with later ones, in such a manner as to be of little use in forming proper judgment.

What has been the sum total adduced by the advocates of no change from old methods? The gradual lowering of maternal mortality has been brought about by the sacrifice of larger and larger percentages of children. Fry[6] reported 14 cases treated as follows: Bi-polar version and slow extraction 9 times, membranes ruptured and delivery left to nature once, tampon and natural delivery once, forceps extractions 4, including one application after coming head. All of the mothers recovered and 5 out of the 15 infants were born alive. Of the infants lost, 2 (twins) were not viable; one, in fact, was at the seventh month of utero-gestation and 4 were dead when the case came under observation. The death of 3 infants occurred during delivery.

Let us consider his cases briefly, the kind of placenta with which he had to deal, as these cases are among the few that are recorded in a manner to permit study:

CASE 1.—Edge of placenta felt, membranes ruptured, live child.

CASE 2.—Placenta tissue felt, tampon, child dead.

CASE 3.—Mass of placental tissue hanging down behind symphysis, delivered by forceps, child dead.

CASE 4.—Primip., 5 months' pregnancy, twins, central placenta. Placenta perforated with finger, fetus seized and brought down. Fetus slowly extracted as far as the head, which was imprisoned by the undilated os. Traction made downwards and the skull opened with a pair of scissors; head collapsed and extracted. Second fetus found in utero treated in same manner.

CASE 5.—Central placenta previa, tampon, followed by version. Dead infant slowly extracted.

CASE 6.—Os slightly dilated, placenta felt; bipolar version. Slow extraction. Infant dead.

CASE 7.—Primip., full term. Here no labor pains; placenta felt at os. Bipolar version. Infant extracted dead.

CASE 8.—Placenta felt at os; 8 months' pregnancy. Infant extracted dead. Bipolar version.

CASE 9.—Labor set in at term with eclampsia. Head presented with os dilated, placenta attached to left side. Forceps applied, dead infant delivered.

CASE 10.—Placenta presenting. Bipolar version. Child extracted dead.

CASE 11.—Placenta presenting. Bipolar version. Infant born alive but died next day.

CASE 12.—Placenta felt at os. Bipolar version and extraction of a living child.

CASE 13.—Placenta could be felt through os. Bipolar version and extraction of the after-coming head with forceps. Child recovered.

14. Placental mass in left side, head presenting. Forceps applied and living child extracted, which died next morning.

Two cases (1 and 14) edge of placenta felt, one delivery normal after rupture of membrane, one by forceps.

Ehrenfest,[12] in his paper on "The Impropriety of Cesarean Section in Placenta Previa, with Remarks on a Rational Method of Treatment," the major portion of whose bibliography is later than 1898, arrives at the following conclusions: "Saving the child's life should be one of the main tasks of the obstetrician, but it must not be forgotten that there is an indisputable rule that the mother's life ought to be valued higher than the child's. We can not deny that the excellent results of the modern treatment of placenta previa have been gained only at the expense of fetal life. We can not deny that the result of this treatment in regard to fetal mortality is very unsatisfactory."

Dr. Harris[13] at the Pan-American Medical Congress reported nine cases treated by rapid manual dilation, followed by delivery, with only three children saved.

Zinke[14] gives his fetal mortality in placenta previa in 40 cases as 55 per cent., but he does not give an analysis of the position of the placenta.

Stetson,[15] in his report of 1000 labors, gives the results of the treatment of five cases of placenta previa, as follows:

CASE 1.—Complete. Ergot, full doses. Rapid dilatation; version; forceps.

CASE 2.—Partial previa. Dilation; version. Child dead.

CASE 3.—Partial previa. Dilation; version. Forceps.

CASE 4.—Placenta covered os. Dilation; version; forceps.

CASE 5.—Six months' pregnancy. Child dead.

These are not cases selected to prove or disprove any position, but are the most recent of published American results. If necessary to take figures obtained under the very best hospital conditions abroad, to prove that in the hands of the most skilful, the child can expect little, let us take the figures of Shauta,[4] given under date of Feb. 26, 1902, and we find little change from those already given. He says: "The fetal mortality with our present treatment is a high one because we treat expectantly and

refuse to perform immediate extraction as a procedure dangerous to the mother."

Out of 234 cases of placenta previa, 127 children were lost, a percentage of 54. There were 35 deaths in children in the 50 cases of placenta previa centralis, 70 per cent., leaving 92 cases of placenta previa of varied types (excluding placenta previa centralis), 50 per cent. mortality.

The question we should put to ourselves in dealing with placenta previa is this: Are we justified in advocating and performing an operation which may have a slightly higher death rate for the mother, but which offers 95 chances in 100, at least, to a fetus alive at time of operation?

The profession in this country certainly have answered this, and have answered it affirmatively in substituting Cesarean section for craniotomy and premature delivery in cases of pelvic obstructions, both of which procedures have an extremely low maternal mortality, but a very high fetal. And again, how many of our practitioners are willing to uphold Leopold[16] when he says: "In private practice, owing to unfavorable surroundings, craniotomy, in contracted pelvis, is preferable to Cesarean section." When the fetal heart is weak he perforates.

The unfavorable surroundings in private practice, of which Leopold complains, are not looked on in this country as contra-indicating conservative midwifery, and it is by reasoning on conditions prevailing abroad that the opponents of Cesarean section for any form of placenta previa in this country make their greatest mistake. Then, by giving us the statistics and results of hospital cases in expert hands, they so minimize the danger, to the student, that every graduate in medicine looks upon himself as competent to treat any case of placenta previa in private practice, until some frightful experience teaches him differently.

If the success of American midwifery is not a sufficient refutation of the treatment proposed by Leopold, think over in your minds the thousands of successful capital operations which have been performed in private houses, for every conceivable condition, before deciding that section in private practice is not justifiable.

Has the child a right to its life? This has been so thoroughly considered in years gone by, in discussing craniotomy, that it hardly seems necessary to discuss it again, but if the child has a right which forbids the direct taking of its life, "is there anything but a difference in degree between perforating the head, an operation which we know will destroy the child and in performing an operation which of itself will result in the loss of one-half to four-fifths of the children."

Williams[17] says, in discussing contracted pelvis: "If we are operating solely in the interests of the mother, induction of labor appears to be a very excellent operation, but under the circumstances, why not do abortion at a much earlier period, and save all the weary months of pregnancy?"

We may well ask, to what would such a process of reasoning lead if accepted? It is urged that a large proportion of these children are not at full term; that may be so, but in over 90 per cent. of reported cases the child has lived in utero beyond the period at which it is viable, and all the children delivered by Cesarean section in the presence of placenta previa since 1899 have been delivered alive and have lived a certain length of time afterwards, as follows:

Tait;[18] child lived one month, dying of bronchitis. (Porro.)
Donoghue;[1] [19] 2, 1900, both alive. (June, 1902.) (Sanger.)
Hare;[20] 13 days, inanition. (Sanger.)
Gillette;[21] 1, alive. (Porro.)
Covington;[22] 1, alive. (Sanger.)
MacCalla;[23] 1, alive. (Porro.)
Matolli;[24] who did Cesarean section after trying to pack vagina, lost child. (Sanger.)

The resort to a Porro I do not believe to be indicated in a case of previa, unless otherwise complicated, any more than it is in cases of contracted pelvis.

Andrews,[25] in summarizing his paper on "Cesarean Section vs. Craniotomy," says: "I will say that craniotomy on the living fetus is very, very rarely justifiable, unless the choice of the mother to sacrifice the life of her unborn child, rather than subject her own life to a slight risk, renders it justifiable." If the mother has, in cases like placenta previa, or pelvic obstruction, the right to decide what treatment the attending physician shall employ, to the end that she shall not then be exposed to any danger, that her child may live, or shall have the right to demand an operation (Porro) that she may not again be exposed to the dangers of pregnancy, why has she not the same right to decide that any given pregnancy may be attended with more danger than she desires to risk, and call for its termination at any time she may elect? How many of the profession are willing to act as passive agents in carrying out such treatment?

The failure of the uterus to contract does not seem to be a good indication for a Porro. I believe that many cases of excessive hemorrhage will disappear if the operation is not performed with one eye on the time and the other on the field of operation.

In my cases, after removing the child from the uterus, I have waited and allowed the uterus the same time to contract and retract that I would allow if conducting a normal delivery. This I believe to be very important, and if, as in some cases, there seems to be danger from the loss of a small amount of blood, I would free one edge of the placenta, put a gauze wick through into the vagina and close uterus and abdomen, leaving placenta to separate later. The danger of ventral hernia following operation does not seem to be important if the incision is made through the rectus muscle and properly closed.

CONCLUSIONS.

Cesarean section in certain cases of placenta previa has a fairly well-defined standing; its limits can not as yet be accurately defined. At present it seems that the conservative Sanger should be performed in cases of:

1. Complete previa.
2. Previa in primiparæ in the presence of severe hemorrhage or a rigid os.
3. Where there is a history of previous operative delivery.
4. It should be considered in all cases of placenta previa where version is indicated if a reasonably skilled surgeon is available, and only an ordinary obstetrician.
5. All of these indications are based upon a probable viable child, 28 weeks of gestation and upward.

When the pendulum swings from the excessive amount of surgery taught in the medical school, to the proper teaching of obstetrics it may be necessary to revise these indications. While, aside from this, a man, as soon as he becomes an expert obstetrician, finds it to his advantage to gradually work into something better, for, as Dr. Price has expressed it, "There has never been a premium on practical obstetrics."

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DISCUSSION.

DR. RUDOLPH W. HOLMES, Chicago—I have dabbled in statistics, and I am positive that they are of only relative value unless they demonstrate the results of one body of men in a large hospital service; the gathering of case results from promiscuous sources never can give positive criteria to found a working hypothesis; seldom does a man report a fatal termination unless there be unique features about the case. In placenta previa statistics are absolutely worthless as regards mortality or method of treatment unless there be a clear differentiation between the several types of previa—the lateral, partial and central. The mortality of lateral previa is low; speaking very broadly, it is exceptional for lateral previa to terminate fatally, only when the type approaches the marginal form does its portent become more grave. Central previa, on the other hand, is always potentially very serious. In lateral previa it is not possible to lay down positive rules of conduct—often more or less temporizing measures will secure favorable results; more drastic procedures are reserved for special indications. In the central previa we may lay down very clear and positive principles which will answer for nearly all cases, but the treatment is always an active one. At this time I think it is a most pernicious teaching to advocate Cesarean section in central previa; it is a continuation of that *furor operativus* which so held the gynecologist some ten years ago. The first thing to do is to develop the treatment of placenta previa for the average man. When he knows that, then we can begin to talk of Cesarean section in selected cases, but as yet we do not know the possibilities of the obstetric treatment. To-day, perhaps, the most faulty treatment for placenta previa is the tampon, but for the general practitioner, the man with little or no obstetric technic, a well-applied tampon will give him the best results. I would be distinctly understood that I do not advocate the tampon for the obstetrician, but for the practitioner who has not the skill acquired by practice in operative obstetrics, or an adequate obstetric armamentarium at hand: teach students how to build a proper tampon, and much of its ignominy will disappear.

The best results of the future in central previa will come from the timely introduction of the colpeurynter, followed by internal version, or an early Braxton Hicks version. The cardinal principle should be to perform version as rapidly as is consistently possible, and to make the extraction as slowly as possible. Rapid extraction is the explanation of many a death from deep cervical laceration, and is the explanation of many a so-called rigid os—both being dependent on extraction before dilatation was complete. The high mortality of previa is due to hemorrhage and infection; the treatment as outlined above will do away with many deaths due to the former, and a proper application of asepsis will entirely eradicate the second. The possibilities of the future are well exemplified in the recent figures of De Lee, who reports 31 consecutive cases with one death, and this one death was a neglected midwife case.

It is a most egregious error to compare the percentage mortality of Cesarean section as usually given for the operation done on pelvic indications with the fatality when done for placenta previa. The usual figures, 5 per cent., mean results in selected, uncomplicated cases. Combining favorable and unfavorable cases together will still show a mortality of nearly 20 per cent. in Cesarean section; this latter figure was given me a short time ago as the mortality in the Ohlshausen clinic by one of his assistants. The fact is that the specialist rarely receives placenta previa cases first hand; the general practitioner gets them, wastes valuable time, and finally sends for the obstetrician, who must then do the section, if this new teaching is to be adopted. I would lay stress that the time never will come when the Cesarean operation in placenta previa will mean an uncomplicated case; it always will be an unfavorable indication for section. He who will compare the operation done on pelvic indication with that for placenta previa, he who will declare the mortality of previa treated obstetrically is 20 or 25 per cent., and surgically only 5 per cent., is dealing with the worst kind of sophistry. After the operation the woman still will be subjected to the dangers of post-partum hemorrhage—it will be necessary to tampon the uterus, which can not be effectively done through the uterine incision, so the only course to pursue will be to do an hysterectomy. Cesarean section for placenta previa should only be permissible in contracted pelves, and placing the relative indications somewhat higher than usual, and in old cicatricial contractions of the parturient canal where extraction would be hazardous. I agree that Cesarean section when done early will save more babies, but so long as 10 per cent. of babies born alive die within the first twenty-four hours, so long as nearly 25 per cent. die within the year, and 52 per cent. before fifteen, I claim the woman's life is worth more than the baby's, and her chances should receive the first consideration.

DR. G. T. HARRISON, New York—I would like to raise my voice against the use of any such operative interference as that for the treatment of placenta previa. The principal thing is to save the life of the mother; the child is a secondary consideration. All efforts should be extended to save both, but if the interests of one must be weighed with those of the other, the mother's interests should be considered first. I have the same opinion of statistics as Dr. Holmes. I recollect very well the witty remark made by Dr. Sims years ago when arriving at statistics on ovariotomy. He said: "My young friend had 100 per cent. of recoveries." "How is that?" said somebody. "Why he had only one case, and that got well." That was only a witticism, but there is a great deal of truth in it. Statistics can not be relied upon. A very good point was made by Dr. Holmes when he said that a Cesarean section is absolutely contraindicated when the patient has been examined, and when there is any fear of infection. In the greater number of cases you can fear infection, especially if the ordinary practitioner of medicine has examined the patient beforehand. I would not dream of performing a Cesarean section if the case had been examined before, unless it was an expert who did it.

The main thing that should catch our attention is that our efforts should be directed to diminishing the frightful mortality of the child, and I think experience has fully demonstrated that in treating these cases by slow extraction after a Baudelocque version, that if we ignore the child and consider only the mother, we will save more children and more mothers. We ought to save all the mothers, and by proper precautions we can. I have had a large experience with placenta previa, but I have never lost a mother, so that my statistics are very satisfactory. A large per cent. of the babies died. Of course, the great danger in these cases is the danger of infection, but that is largely eliminated by present methods.

The reader of the paper intimated that even when the head came down, danger from hemorrhage was to be considered. In all cases when the head comes down it stops the bleeding by acting as a plug. In those cases you have no trouble in the way of hemorrhage, and you can wait for dilatation, and when you put on the forceps it is just as easy as any other case.

DR. HUGO EHRENFEST, St. Louis—In discussing this subject, some mention was made that the time was approaching when Cesarean section would be the only proper treatment in placenta previa. Another gentleman said it would be the school treatment of placenta previa. To-day the indication is rather

limited, but not limited enough. It should be that no conservative Cesarean section be made in a patient who has been examined by someone who has not been clean.

Another question is how to make a diagnosis of placenta centralis in time. If the cervix is open enough to admit two fingers, we must make version or Cesarean section. We are not able to decide whether we have to deal with placenta previa centralis or partialis, in which case the hemorrhage stops immediately when the head comes down. I do not compare the statistics of Cesarean section and placenta previa, because that can not be done. We ought to have statistics of both. Cesarean section in selected cases gives us some very good statistics.

DR. DONCHUE, in closing—Any general practitioner who is competent to pack a vagina properly is also competent to do a Cesarean section, because his asepsis must be complete in either case. The second speaker spoke of no hemorrhage after rupture of membranes in partial previas. I expressly said that in that class of cases Cesarean section was not indicated, and it should never be used. It is a self-evident fact that rupture of the membranes allows the head to come down and forceps can be used. My advocacy of Cesarean section is based on a belief that the child has an undeniable right to life, which should be preserved to it, if possible. To go over the other points which have been mentioned in the discussion would simply be repeating the arguments of the paper just read.

TREATMENT OF TUBERCULAR PERITONITIS.

(Continuation from page 604 of the discussion on the paper of Dr. Porter.)

The postmortem examination was made by Dr. Fütterer, one-half hour after death. General abdominal tuberculosis of the ascitic variety and slightly enlarged mesentery glands and firm adhesions matting together the whole mass of intestines, was found. No foci were found in the lungs or pleura. There was no old tubercular disease of the tubes. The intestinal mucous membrane was not examined.

Cultures from the peritoneal cavity were sterile and there was no pus infection of the peritoneum.

The points of interest in this case are: 1. The insidious onset of the disease. 2. The persistence of normal temperature. 3. Extreme pigmentation of the skin without Addison's disease. 4. The presence of a tumor in the median line of the abdomen extending from above the umbilicus to the pubis; and the tumor being formed by the greater omentum becoming rolled on itself and filled with fluid. 5. The termination of the case, death following thirty-six hours after the operation with symptoms of hemorrhagic diathesis. This was probably due to a toxemia of some sort, the toxic substances probably being liberated as a result of the changes which occurred consequent on operation.

CASE 2.—B. B. This patient was a young woman who was operated on for what was thought to be suppurative peritonitis following a rupture of the appendix. Her illness began suddenly with a chill and severe abdominal pain, which in the course of a few hours became localized in the region of the appendix. The temperature was high, ranging from 103 F. from the first. The abdomen soon became greatly distended, with marked rigidity of the abdominal muscles.

Operation.—The abdomen was opened through an incision along the outer border of the right rectus muscle, on the third day after the onset of the disease. The peritoneal cavity contained a large quantity of turbid fluid, the walls of the appendix and cecum were greatly thickened, but no rupture occurred. The entire peritoneum was thickly studded with tubercles and dense adhesions binding together the intestinal coils. The mesenteric glands were enlarged, some reaching the size of an English walnut. The appendix was removed, the cavity irrigated with salt solution and drained by tubular and gauze drainage.

The patient made a very slow recovery, leaving her bed only at the end of three months. As soon as she was able to travel, she was sent to Colorado. She remained there for two years and completely regained her health. At the time she left her bed, she weighed about eighty-five pounds. When she returned to this city after an absence of two years, she had gained fifty-five pounds in weight.

As a result of the operation she had a ventral hernia for which she was operated on in the summer of 1899, three years after the first operation. In operating for the cure of hernia, the abdominal cavity was again opened. Careful inspection showed that scarcely a sign of the former extensive tubercular disease existed; all the tubercles had disappeared, the peritoneum was everywhere normal in appearance. Intestinal coils were nowhere adherent. The mesentery glands had mostly resumed the normal appearance. There were a few calcareous deposits to be seen here and there in the mesentery. These were surrounded by a wall of white fibrous tissue. Several of these deposits with surrounding fibrous tissue, were excised and submitted to a microscopic examination. No tubercle bacilli were found.

Since that time the patient has resided in this city and has been examined a number of times. There are no signs of tubercular disease in any part of the body. The interesting features of this case are: 1. The acute character of the disease, simulating closely acute appendicitis and the beginning of suppurative peritonitis at the time of operation. 2. Extensive abdominal tuberculosis, a part of which must have existed previous to the onset of the symptoms, although the patient was apparently in perfect health. 3. The complete recovery from the disease, as was evidenced by the return of health and the disappearance of all tubercular lesions of the peritoneum.

DR. ROBERT F. WEIR, New York—This is a subject that interested the American Surgical Association last week and a good deal of liveliness was elicited in the discussion. If I were to get the opinion of all of you I think it would be something like this: It would be admitted that we do not know how the disease invades the peritoneal cavity, but we are able to decide that its infection comes partly through the genitalia in both sexes; we also know that the appendix occasionally gives rise to it, but in many instances we can not trace it at all. It will be also admitted that when a case presents itself to us where there is fluid in the valley we can decide usually and wisely decide on a distinct plan of treatment. The accumulation may be all over the abdominal cavity, while in some cases it is encysted. Occasionally we can treat these cases by waiting and get good results, but why do this? Why keep this child in whom the disease is most common waiting when puncture or, preferably, a small incision, is preeminently a safe procedure? In reference to the influence of light and air, it is not believed that this plays an important part. I believe when a cure or improvement is effected the reason for it is to be found in the free invasion of the cavity, which means excision through the peritoneum, which brings about reflex circulatory change all over this largely extended membrane. When, however, one knows or finds by incision that no fluid is present or that matted intestines present themselves, it is best to hold one's hand. Even in such arrested operations I have ocasionally found good results show themselves, though this is the exception.

DR. A. J. OCHSNER, Chicago—In looking over my own cases carefully and reviewing the literature on this subject I have come to certain conclusions which, it seems to me, are worthy of application in our clinical work. In the first place it seems that there is a certain class of patients suffering from tubercular peritonitis in whom medical treatment is better than surgical. This should consist in rest in bed, hygienic surroundings, aseptic food, and possibly certain remedies such as creosote and iodin. This form of treatment will probably enable 50 per cent. of these cases to improve. This relates to cases suffering from acute tuberculous peritonitis with ascites. There are two reasons why the surgical treatment is not indicated: 1. They do get well without surgical interference. 2. It has been shown that in acute tuberculosis of the peritoneum, with ascites, the surgical treatment was not followed by permanent cure when the operation was performed before the tubercles were fully developed, and for this reason this class should be excluded. There is, therefore, one par-

ticular class in which the surgical treatment is absolutely indicated, which comprises those cases that are not benefited after the internal treatment outlined above has been faithfully tried for several weeks. If an acute case is treated by hygienic measures and internal remedies for some months we frequently find that certain portions of the peritoneal cavity will become separated by adhesions. Nature tries to dispose of the tuberculous infection in this matter. In these cases we have circumscribed areas filled with ascitic fluid usually bounded above by adhesions between the cecum, colon, small intestines and omentum, and below by the pelvic organs together with a portion of the sigmoid flexure, also forming a mass of adhesions. The improvement under medical treatment continues to this point and then it ceases, and the patient becomes weaker and weaker and finally dies unless surgical treatment is instituted. It is not wise in these cases to remove the infected portions. If the abdominal cavity is simply opened and drained, the tuberculous tissue will be absorbed in about 50 per cent. of this class of cases. I recall some cases, which I reported recently, in which the pelvis was so completely filled with this tuberculous material that the condition seemed absolutely hopeless, and still simple drainage brought about recovery sufficient to make a subsequent normal pregnancy and childbirth possible. There are many other things of great practical importance I might mention, such as caseation of the tuberculous material and adhesions between loops of intestines. If these areas are disturbed during the operation intestinal fistulæ will follow, while if they are simply left to nature they are likely to clear up and leave nearly normal conditions. As to the after-treatment, I would say that the same principle applies to these patients who have recovered from tuberculous peritonitis that should be borne in mind in the after-treatment of patients who have recovered from localized tuberculosis in any other part of the body. Either the patient has swallowed tuberculous food or has tuberculosis of the lungs or he is living in unhygienic surroundings. In order to remove the possibility of reinfection, the conditions which existed primarily and were responsible for the original infection, should be removed. The patient should be placed in good hygienic surroundings. His diet should be properly chosen. He should receive tonic and antituberculer treatment for a considerable time after recovering from the tuberculous peritonitis.

DR. ERNEST LAPLACE, Philadelphia—The tubercle bacillus is an organism of low vitality but of remarkable persistence, and the reaction to its growth is a slow development of tissue. There are two kinds of tuberculosis: pure cultures of tuberculosis, and secondary infected areas of tuberculosis; and it matters much whether we are dealing with the pure condition or a contaminated one. As a result, typical cases of tuberculosis are almost always infected by other germs. Tuberculosis of itself tends to get well; we have this often exemplified especially in the lungs. The tubercle bacillus will die if you give it a slight incentive. Being a pure infection, it only asks a slight degree of irritation to absent itself and it is cured easily by adhesive inflammation. Take the laboratory view of these cases, for instance, the tubercle bacillus will die if the slightest abnormal conditions are applied to it. If you put it in a place where the alterations in temperature are extensive, it will surely die. All you need to do is to alter the nature of the soil in order to cure tuberculosis. Hence the counter irritation of the air, and the counter irritation of the operation, tend to destroy and cure the local tuberculosis.

DR. A. H. FERGUSON, Chicago—Out of 15 cases of tubercular peritonitis, where I opened the abdomen, 12 were benefited, 2 were cured, and 1 died under anesthetic. As to those that got better, one was a girl of fourteen years, with an enlarged liver and ascites. I suspected hydatids before I opened the abdomen. The liver surface was studded with tubercles, as were the bowels. I closed the abdomen and left the fluid there, the little girl making a beautiful recovery. She has since had four children and is in good health to-day. The other case that I shall mention was just at the other end of tubercular disease. She had gone through all its stages which first involved the uterus and tubes and ovaries and these were removed. Tuberculosis of the intestines then followed and caused chronic obstruction of the bowels, which were found all matted together. I removed considerable of the small bowel and four or five inches of large bowel and made an end-to-end anastomosis of each. The woman made a perfect recovery, gaining over forty pounds and is in perfect health to-day. The first case was no doubt helped by the antiseptic quality of the blood itself. I agree with the opinions expressed by Dr. Weir.

DR. ROBERT REYBURN, Washington, D. C.—I remember the case of a boy 17 years old who had tuberculosis of the right lung. Later he developed an inflammation of the peritoneum, and when I saw him he evidently had had an effusion into the peritoneum. Although I believe in doing very little in these cases, I decided to operate on him. I made a simple incision, washed out with a solution of boric acid and introduced a tube for twenty-four hours, withdrawing over two quarts of purulent material. The question is, how are these patients cured? It sometimes seems ridiculous that after simply opening the abdomen the patient is cured, but I believe it is due to the bactericidal power of the abdominal fluids. They seem to be able to take care of a moderate amount of poisonous products themselves. When we open the abdomen and wash out the abdominal cavity, the bactericidal power of the blood serum itself does the work and there are so many cases of this kind reported that it does seem to me to be one of the most admirable things in surgery.

DR. RUFUS B. HALL, Cincinnati—My experience does not correspond with some of the previous speakers in reference to patients suffering from chronic tuberculosis. In all these cases where we have a localized abscess, especially in the lower half of the abdomen and pelvis, or at least in a large percentage of them, the nidus of infection is in the Fallopian tube, while in a small percentage it is in the appendix. In all cases where the tube is the seat of abscess, I think the correct procedure is the removal of the tube and not drainage alone. My experience is that drainage is the correct treatment afterwards, but whether it should be vaginal or abdominal, must be settled in each individual case at the time. In all cases operated on where there is pus, I think it better to drain. My ultimate results have been much more favorable than Dr. Ferguson's. More than 50 per cent. of all cases operated on have recovered and have remained well long after the operation. Of course, some die following the operation and in others meningeal tuberculosis develops, but these are the exceptions. Some cases of acute peritoneal tuberculosis will recover without drainage, although drainage does not hurt them.

DR. RICHARD H. GIBBONS, Scranton, Pa.—To be successful in the management of these cases we must use internal medication, such as iodoform and iron; guiacol and ichthyol. I fully agree with Dr. Weir and the other gentlemen who believe that light and air are not especially the means of cure in these cases as long as there are other means of the operation to be considered. It is owing to the large increase in the amount of blood to the parts after they have been freed from adhesions, and particularly after any extensive surgical procedure, that we are able to do good for tuberculosis in the peritoneal cavity. Dr. Joseph Price explores the abdomen thoroughly in every surgical operation performed by him in these cases, with a view of discovering peritoneal tuberculosis, and his method is to go into the cavity, dealing with all foci of infection, exposing the mesentery on both sides in every case. After opening these up, by making a free incision, he packs the cavities with iodoform. Gauze, of course, is used and the abdomen is thoroughly washed out with hot water. The tubes, ovaries and appendix should be removed, I believe. This is the most successful way to deal with tubercular peritonitis. When we get an almost inoperable case, it may be well to desist from further active surgical interference than a mere opening, but I doubt it. Dr. Agnew used to order iodoform and iron, but Trousseau condemned iron in lung tuberculosis. I think iron combined with iodoform goes a long way towards the curative effect on these cases, and the carbonated creosote may have a very large contributory influence towards a cure.

DR. PORTER, in closing—From the tone of the discussion it would seem that I had advocated the therapeutic power of light

and air to the exclusion of other things, but I distinctly did not do this. The point I wanted to make was this: it is not the trauma alone that does the good, nor is it alone the relief of pressure. It seems to me there is unquestionable evidence to prove that no one cause can be assigned to explain the cure which results after operation in tuberculosis of the peritoneum. The other point I wanted to make is that a careful study of the literature of the subject had convinced me that there are many elements entering into the cure of each case. To be wise and fair, we must attach importance to all the elements and use common sense, which really is the only thing that enters into the technic of all medicine and surgery. In support of what I did say in reference to light and air, I would mention that these conditions probably do more good than is often ascribed to them. Dr. Laplace says that, if you do not keep these bacteria in the dark they will die, but it does not hurt them to lie in the light and air. These cases get well, but not because of tuberculous inflammation, nor is it because they are enclosed within walls of fibrous material. I agree with Dr. Hall and should certainly drain whenever mixed infection is present. Tubercular germs are not pus-producing germs. If you have pus you must have something besides tuberculosis.

THE ADVANTAGES OF THE VAGINAL OPERATION IN OBESE PATIENTS.*

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The assurance and skill which an operator acquires by following in any one condition a certain method of operation and technic might be commended, provided all his cases approach an ideal. However, this is far from any one's experience.

The popularity of the vaginal route for hysterectomy which is steadily growing among American surgeons has not reached its height with me. However, I do find in certain cases the method to be, if not ideal, at least expedient. I refer particularly to those cases in which excessive deposits of adipose tissue throughout the body are a sure indication of lowered vitality and lessened power of resistance to shock and to sepsis.

My early experience with this class of cases was very unhappy, and I have welcomed the simplification of the technic of vaginal hysterectomy by a bi-section of the uterus as a fortunate advance in modern surgery.

ADVANTAGES MENTIONED.

I wish merely to emphasize the value of the vaginal operation in those cases where general physical conditions would make one hesitate to advise an abdominal section, and will leave the discussion (so far as the local conditions obtains and the technic of the original method) to others.

1. The length of time in which the patient is being subjected during an operation should always be considered as a factor against the employment of the unessential elements of technic. The longer the time of operation the greater the depression, the larger the amount of anesthetic, the longer exposure, the more handling of parts which must necessarily give an increased reflex action occasioning shock.

2. In thick belly walls the difficulty in which the pelvic organs are brought into the wound necessitates more or less bruising of the wall—a source of danger to infection. The poor blood supply of fatty tissue is another element of risk in the proper repair of a wound.

The contra-indications to any vaginal procedure except merely for drainage of an abscess cavity is the presence of adhesions above the brim of the pelvis.

REPORT OF CASE.

In the case which I am about to report, however, the general condition of the patient was such that notwithstanding the evidences of adhesions outside of the pelvis, hysterectomy was performed by the vaginal route with a very satisfactory recovery, whereas the result, I am sure, would have been disastrous had an attempt been made to remove the diseased organs through an incision in the abdominal wall.

History.—Mrs. E. S., aged 33 years, married for the second time, three years previous. She had given birth to three children, of whom the youngest was 15 years old. She had had no miscarriage nor puerperal fever following any of her confinements. When 23 years of age, she had diphtheria, and at 30 a severe attack of smallpox, her first husband and children dying of the latter disease. The early menstrual history is negative. After the birth of her second child she suffered greatly at times with dysmenorrhea, flowing at irregular intervals and usually in profuse quantity. Five years ago she had severe hemorrhages from the uterus and was curetted. She was entirely relieved for some months but gradually the conditions returned and she has been practically flowing now more, now less ever since.

In June of 1901 she was again curetted with temporary relief; since this last curettement she suffered intensely at times and noticed that a swelling in the lower part of the abdomen which she first discovered in 1900 was steadily developing. This, upon examination, however, proved to be only adipose tissue in the belly wall. The uterus was greatly increased in size and immovably fixed in retroversion—large inflamatory masses were found in each lateral vault of the vagina.

Operation.—On Feb. 10, 1902, after curetting and thoroughly disinfecting the whole uterine cavity, I proceeded to the removal of the uterus and its diseased appendages by vaginal hysterectomy—bisecting the uterus and applying clamps to the broad ligament.

The walls of the uterus were much thickened and fibrous, and there were double tubo-ovarian cysts or old abscesses with exceedingly dense adhesions to adjacent structures. Fingers of omentum and a coil of intestine were freed and returned to the abdominal cavity and the pelvis and vagina were packed with sterile gauze.

Six drams of chloroform were administered for a few minutes short of one hour. The time required for the hysterectomy was 35 minutes.

The clamps were removed in 48 hours and the last of the gauze in the pelvis on the eighth day. The patient was out of bed on the 22d day following her operation. The vault of the vagina being perfectly closed and seemingly firm.

This patient, whose height was 5 feet, 7 inches, weighed 281 pounds. She was extremely anemic and cachectic with a pulse of small volume, low tension, irregular and arrhythmic and averaging about 110 per minute.

At no time following the operation did I feel a bit anxious as to the outcome, and yet never did I have so unpromising a case.

DISCUSSION.

DR. C. O. THIENHAUS, Milwaukee—I am always in favor of the vaginal route because of the immediate and remote advantages of this route for the patient, not always for the surgeon, and am of the opinion that, what we can operate on by this route should be operated on by this route. What experts in this line of work are able to perform is shown, for instance, by the statistics of Duehrssen, who operated on thirty-six cases of extrauterine pregnancies ruptured and unruptured by vaginal anterior celiotomy without a death. He advocates this method for every case of extrauterine pregnancy up to the third month. Statistics of others show the same good results. Naturally, the individuality of the surgeon and the experience in this line of work plays a great rôle. Dr. Goldspohn chal-

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lenged me the other day to show him the literature where Duehrssen cites only 2 per cent. of recurrences with his method of vaginal suspension. This is cited, as will be stated in my paper the day after to-morrow, in Duehrssen Zeile: 20 photographic plates for illustration of gynecologic operations, in special conservative colpo-celiotomy, Berlin, 1902, Kargers Verlag, page 17.

DR. J. H. CARSTENS, Detroit—I want to say, in defense of American operators, that we can show men here in this country who had thirty, forty and sixty cases without a death and they operated by the abdominal route.

DR. J. WESLEY BOVEE, Washington, D. C.—I agree thoroughly with the author of this paper. I believe that the vaginal route is the proper route for this kind of work. It is the route for carcinoma when we intend to do a radical operation in but rare cases. In ruptured tubal pregnancy it is really a toss-up whether it is the preferable route or not. If adhesions, which are beneficial, in these cases, are present, and an accumulation of blood, etc., way down in the pelvis, we can take it out in this way, but if we have rupture with much blood in the peritoneal cavity, or perhaps a living fetus, with the sac, then the vaginal route is out of place, and the abdominal route is the only one to use. I had a case recently of ruptured tube, with a three and a half months' live fetus, much blood in the abdominal cavity, which I could not have discovered if I had gone through the vagina. We must not forget that there is a pelvic brim, and work above it can not be done through the vagina.

DR. SETH C. GORDON, Portland, Me.—I do not believe Dr. Humiston voices the sentiment of the gynecologists of this country when he says that operations by vagina are increasing. I believe they are decreasing and very rapidly, too. The case he cited was one strictly for the vaginal operation, and I make this emphatic because I am satisfied that if I had adopted the same route in a similar case, I would have saved my patient.

DR. CHARLES P. NOBLE, Philadelphia—I agree with Dr. Humiston that in fat patients the abdominal route presents many difficulties, but I do not believe for one moment that vaginal hysterectomy is on the increase, either in this country or in any other country. Some years ago Dr. Jacobs of Belgium came over here to teach us to do vaginal hysterectomy. He saw what good work was being done with the abdominal route and he is now the leading abdominal operator in Belgium. The same thing is true of Segond of Paris. So far as cancer is concerned, there is great reaction in Europe for the abdominal route.

As to the relative merits of these operations in extrauterine pregnancy, I have done about seventy-five typical operations and have had one death. This patient had both phthisis and nephritis. Of four cases I operated on from below, two had to be reoperated on from above. In one hydrosalpinx developed and in the other a tubal mole developed. One of our members had hemorrhage a number of times and had to go in from above, after having started from below. We are not going to gain anything by giving up the good thing we have in the abdominal operation for the uncertainty of the vaginal route.

DR. HUMISTON, in closing—A few years ago I did nothing but the abdominal operation, and I considered I had a low mortality, but since I carefully selected the route applicable to each case, my mortality is still less. I make one vaginal hysterectomy where I make six abdominal hysterectomies. Judgment should be displayed in each case. I have not as yet lost a case of extrauterine pregnancy, and I have operated on every one from above. When the patient was in profound shock, I would resort to saline infusion the moment the anesthetic was started, and I have a *nil* mortality in extrauterine cases. Some of the histories of these cases are almost beyond belief. I have operated when the patient was pulseless, temperature as low as 94.5. Saline infusion was started the moment the operation began, the abdomen was opened rapidly, without waiting to clear away clots, but I put on the clamp, and when the operation was completed the patient was taken off the table with a pulse. You must individualize your cases, and sometimes you will do an occasional vaginal operation, but in the majority of cases your operation will be abdominal.

POST-OPERATIVE INTESTINAL PARESIS.*

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NEW YORK CITY.

The convalescence of a person at the present time on whom an intra-abdominal operation has been performed is usually so peaceful a period that it is often hard to realize the grave dangers which surround the patient and which are liable suddenly to obtrude themselves and change the scene into a stormy and anxious one. Hence, the post-operative responsibility of the physician is great, for the safety of the patient depends on his ability to quickly recognize and successfully treat these complicating conditions as they arise. Of these complications the most frequent and probably the one least often recognized in its initial stage, when it is readily controlled and a fatal outcome avoided, is that form of intestinal obstruction due to failure of the muscular fibers of the intestines to contract, giving rise to an accumulation of the bowel contents in the paralyzed portions of the gut.

ETIOLOGY.

The trouble usually arises from injury of the intestinal nerve supply in the course of an intra-abdominal operation, and is especially liable to occur if the operation is prolonged and rendered difficult by reason of the distention of the bowel with gas. It is probable that the rapid and excessive development of gas which often follows laparotomy is due to defective or deranged innervation, as has been pointed out by Mr. J. W. Malcolm of London, rather than to fermentative and putrefactive processes, although these may be important factors in the production of the trouble. Adenot says that in a certain number of these cases the chief difficulty is due to pressure upon the left subcostal angle of the colon by the distended coils of small intestines; peritonitis and enteritis-thrombosis and embolism of branches of the mesenteric arteries or veins may also give rise to it.

SYMPTOMATOLOGY.

When the trouble is due to trauma of the intestinal nerves it first manifests itself by the continuance of the nausea which usually follows the administration of the anesthetic, therefore, if no morphia has been administered to the patient following the operation, and eighteen hours have elapsed since its conclusion, and she is more or less nauseated, having no desire for nourishment, or is regurgitating a quantity of straw-colored liquid from time to time, has passed no gas from the anus, is slightly tympanitic, the pulse rate weak and increasing in frequency, the bodily temperature slightly elevated while the respirations are normal, there is good reason for believing that the patient is suffering from intestinal paresis. If the course of the disease is not interfered with, the vomiting becomes more frequent, the amount of liquid ejected larger in quantity, its color gradually darkening till it finally becomes black, its odor seldom, however, becoming fecal in character; meanwhile the intestinal distention continues to increase, the pulse rate to rise and to lose in force, the body temperature slowly rising, while the respirations slightly increase in frequency. The course of the disease is rapid, a fatal termination usually being reached within forty-eight hours of the onset.

DIAGNOSIS.

From peritonitis the disorder may be differentiated by its earlier onset, by the character of the pulse, the

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

frequency of the respiration and by the absence of pain and rigidity of the abdominal muscles. From intestinal obstruction due to adhesions or bands by its earlier onset, less urgent symptoms, the absence of pain and of peristalsis of the bowels above the site of the obstruction. When the disorder is due to a mesenteric thrombus or embolus, the symptoms are more acute in character and there is a history of feeble health and diseased arteries.

TREATMENT.

The occurrence of post-operative intestinal paresis can be usually prevented by the careful preparation of the patient for the operation when the condition for which it is to be undertaken is more or less chronic in character, by the regulation of the patient's diet, the proper use of cathartic medicines and the flushing out of the colon with saline solution. In those cases that are acute in character and where there is no time for this preparatory treatment, much can be done to lessen the danger of the occurrence of the trouble by washing out the patient's stomach directly after the performance of the operation before consciousness is recovered, and leaving in the organ four or five ounces of saturated solution of magnesium sulphate. The passing of a short rubber tube into the rectum at intervals of six hours, followed, after a little time has elapsed to allow of the escape of gas, by the injection into the bowel of a pint of hot saline solution, also tends to prevent the occurrence of the disorder under consideration, as it diminishes the danger of the accumulation of gas in the intestinal tract.

The initial symptoms of intestinal paresis having been recognized a seidlitz powder administered in the following manner will often end the difficulty and start the patient on the road to recovery: The contents of the blue paper having been dissolved in a tumbler nearly full of water, the contents of the white paper is dropped upon the surface of the solution at the time the patient is ready to drink it, a warning having first been given of the importance of retaining the liquid. The advantage gained by the administration of the powder in the above described manner is that the acid dissolves slowly, maintaining its agreeable taste till it is swallowed, and also that some of the gas being generated in the stomach exerts a counter pressure on the intestinal contents and thus helps to overcome the existing reversed peristaltic current and to start it once more away from the stomach and towards the anus.

The physician should personally superintend the administration of the remedy and remain with the patient until the bowels act, for the time is a critical one, and in a few hours the patient will either pass safely out of the threatened danger or be beyond hope of recovery. If the saline is retained by the patient an hour and a half later a tumbler full of hot peptonized milk will often cause the bowles to act freely, and when this occurs all danger is usually over and the patient ceases to regurgitate the stomach contents, passes gas by the bowel, and in a few hours is ready to take eight ounces of peptonized milk every three hours. Should the patient reject the saline, the writer has found it advantageous to administer a second powder within fifteen minutes, or while the patient is somewhat exhausted by the act of rejecting the first, the importance of retaining the solution being explained again to the patient, who often must be ordered in rather an imperative manner to endeavor to retain it. The second effort is usually successful, provided the condition has been promptly recognized and treatment instituted. When more time has elapsed and the tympanitic distention is greater, the patient being unable to retain any liquid in the stomach, the writer has still been able to rescue patients from their perilous condition by passing a tube into the stomach, emptying it of its contents and, after allowing as much gas to escape as would, to wash out the viscus with normal salt solution, and to place in it before withdrawing the tube four or five ounces of saturated solution of magnesium sulphate. While the treatment herein described is being carried out, strychnia in 1/30 gr. doses may advantageously be administered hypodermatically from time to time, provided it has not been previously employed in too large doses. Hypodermatic injection of atropin in 1/60 to 1/20 gr. doses have also been found useful, and C. von Noorden has used physostigmin in doses of ½ to ¾ of a milligram with good results in overcoming the tympanities in the same condition.

Since the writer has learned to correctly interpret the meaning of the early symptoms accompanying post-operative intestinal paresis, and to appreciate their importance, there has been little difficulty in arresting the progress of the disorder by means of the treatment just outlined and of lowering a mortality rate following the performance of intra-abdominal operations in chronic cases from 10 per cent. to less than 1 per cent.

PROPHYLAXIS.

The important points for the physician to bear in mind who is called on to care for a patient who has undergone an intra-abdominal operation, if he would carry his patient safely through the convalescent period, is to abstain from using morphia, and, if the patient is restless and a narcotic drug seems necessary, to use atropia; to remember to watch the patient carefully during the first twenty-four hours, and that when she regurgitates liquid or is nauseated or even disinclined to take nourishment eighteen hours after operation, is slightly tympanitic and has passed no gas or fecal matter from the bowel. he must at once institute active measures for the sufferer's relief, and that if his diagnosis is correct his efforts will be promptly crowned with success, and in a few hours the patient will be out of all danger of an untimely end.

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55 West Thirty-sixth Street.

DISCUSSION.

DR. HENRY O. MARCY, Boston—I rise to emphasize this paper with my distinct approval. I have practiced its teachings satisfactorily for many years, and am glad the Doctor has brought this subject up for our consideration.

DR. DANIEL T. NELSON, Chicago—I have stood over these patients a number of times and appreciate the anxiety of the surgeon. I have practiced this treatment in a modified way, using the sulphate of magnesia in bulk instead of as described Dr. Wiggin. I have been in the habit for many years of using calomel first or along with it, in divided or full doses. I began with five or ten grains in a single dose, and if the patient vomited this I repeated it. I believe now that I get just as much effect from one grain given in five or ten doses as one grain given five times or in one dose. I follow the calomel with the saline. As to the general treatment of the patient, I only wish to emphasize what he has said. I believe strychnin is our sheet anchor, which he has advocated so well.

DR. GEORGE H. NOBLE, Atlanta, Ga.—I will add a few words only in outlining my treatment. The patient is prepared as usual and the anesthesia is begun with nitrous oxid, followed by ether. With this method there is very much less nausea, as less ether is absorbed. I frequently operate with less than a hundred-gram can of ether. I also make it an invariable rule to wash out the stomach after administering an anesthetic to remove the mucus which has been saturated with the anesthetic. They are then put to bed and given saline solutions or stimulants they need by rectum and when necessary hypodermic medication. It is very rare that my cases are troubled with nausea and, if persistent vomiting occurs, I become apprehensive of additional causes. Dilated stomach, diseased kidney and bad hearts are contributing causes and each requires special attention. The stomach should be left absolutely empty and early evacuation of bowels encouraged. An enema of alum water is a valuable remedy. In persistent nausea from almost any cause, evacuation of the lower bowel often gives relief. The alum water was introduced by Dr. Hardon of Atlanta. He said he knew it produced vomiting when given per stomach, and supposed it would act equally as well through the rectum. He gives about one ounce in a quart of water. Now it is a standing rule with me to give this enema whenever there is any gas, colicky pain or persistent sick stomach. One or two injections give relief for three to six hours; then when the stomach becomes quiet it is my custom to administer the old compound cathartic pill. So many patients have vomited themselves so nearly to death with salts that I quit using them long ago. Two of these pills should be powdered and put in a capsule. In severe cases I give four and sometimes repeat them four, six to twelve hours. They retain these pills better than calomel, and get excellent results.

The fact that stomach lavage frequently relieves nausea, vomiting and spitting-up of contents of stomach, shows that many of the supposed cases of paresis are misjudged. It is functional disturbance of the stomach, for if it were paresis of intestines the mere removal of stomach contents would produce no effect, and nothing but evacuation of the bowels would give relief. It is likely due to infection (more or less limited) and too much handling and exposure of the intestines. On the other hand, the condition of the stomach mentioned can almost always be prevented by simple but careful preparation of the patient beforehand and avoidance of meddlesomeness afterwards.

DR. H. D. INGRAHAM, Buffalo, N. Y.—I would like to ask the essayist if he has ever had any experience with paresis of the intestines due to fermentation of food and, if so, what he has done to relieve it. I have seen it occur even when every precaution was taken, both before and after operation.

DR. CHARLES L. BONIFIELD, Cincinnati—Two or three years ago I read a paper on this subject, and I have not had occasion to change my views since then. I recommended the use of physostigmin, founding my belief in its value on its well-known use by veterinary surgeons in horse colic. I have used it in a number of cases, but am not sure whether I really got any marked results from it. As to the cause of this condition, I thoroughly believe that in the majority of cases it is sepsis, to a greater or less extent. Dr. Wiggin has tried to differentiate between septic peritonitis and intestinal paresis, but I think that a certain amount of sepsis is at the bottom of most of these cases. Next to sepsis, the most frequent cause is exposure of the bowel during the operation. For this reason I think it important during abdominal operations that the intestines be well protected by warm sponges.

As to the cleansing of the intestinal tract immediately before operation, I think there is a decided disadvantage in using salines of any kind. They produce watery stools, but do not remove all the contents of the bowel, especially if the patient is inclined to be constipated, when there is an accumulation in the cecum. Salines also abstract water from the system and leave the patient in a much worse condition to stand the operative shock than if some other purgative is used. I have for years prescribed the compound extract of colocynth, combining it with atropin or hyoscyamus to prevent griping. I instruct the patient to drink freely of water for two or three days before operation, so as to prepare her for the loss of some of her body fluid. Aside from purgatives, strychnin is the most valuable drug we have in the after-treatment of these patients. It is a stimulant to the nervous system, the heart and the muscular coat of the intestines. I have found it advisable when purgatives have failed to act after a thorough trial and when rectal injections also failed to secure a movement of the bowels, to stop all efforts in this direction and endeavor to stimulate and sustain the patient by hot liquid food by the stomach and stimulants hypodermically. I have not infrequently seen beef tea under these conditions stimulate peristalsis when purgatives have failed to do so. The stomach should be washed out before food is given.

DR. WIGGIN, in closing—I agree with Dr. Noble that the compound cathartic pill is one of the best remedies at our disposal with which to unload the intestinal tract, but I did not discuss the preparatory treatment of the patient for operation in my paper. I do not favor the excessive use of either salines or cathartics in getting the patient ready for operation; and I generally aim to have the patient under my care for at least a week before the operation, so that I can repeatedly wash out the colon with saline solution and can use cathartic pills or small repeated doses of calomel followed by a saline, and then have two or three days' interval before the operation so as to have the patient thoroughly rested and the system well charged with water.

In regard to the pathology of intestinal paresis: that the condition is not due to sepsis is conclusively shown by the fact that if the disorder is recognized in its early stages and proper treatment instituted, all the symptoms to which it gives rise disappear as soon as the patient's bowels move. My personal experience also seems to show that the cause of the trouble under discussion is due to injury of the intestinal nerve supply and not to sepsis, for the following reason, namely, many of my earlier cases of abdominal section terminated fatally from what was supposed to be at the time peritonitis; on opening the abdomen, postmortem, no evidence of sepsis or peritonitis was discovered and further, when later on in similar cases the abdomen was opened, antemortem, no evidence of sepsis or peritonitis was found. On puncturing the intestines at various points to allow the large volume of gas contained in them to escape, it failed to do so. My attention was long since gradually called to this class of cases from the opportunity which I had of watching two classes of patients upon whom laparotomies were performed. The first were acute conditions requiring immediate operation; the second was for chronic conditions which admitted of careful preparation of the patient for the operation, and the convalescence of the last-named class was so much smoother and quieter than in the first class, even though the operation was of greater severity. My attention was also attracted by these cases of intestinal paresis by the fact that at one of the hospitals to which I was attached, my assistants were changed in the regular routine of the hospital, every six weeks, and I found that when the laparotomy was performed on the patient twenty-four to thirty-six hours before this change occurred that the patient almost invariably died, while from the same class of operations at other periods of the interne service, the patient almost as surely recovered. Careful investigation of the matter revealed the fact that the patients who died at this time of change of assistants had not been carefully looked after and that when nauseated eighteen hours or so after the operation had not been given the usual treatment. Five or six years ago when I had begun to recognize the meaning of the symptoms of intestinal paresis, I had in my ward two patients suffering from the severe form of the trouble; they were both unable to retain the seidlitz powder solution although it had been repeatedly given to them, and realizing the desperate plight of the patients I felt justified in one case in pursuing the following treatment: I washed out her stomach through a tube with saline solution, a great quantity of gas escaping at the time; when the fluid came away clear and no more gas would escape, I left in the stomach four ounces of saturated solution of sulphate of magnesia. Five hours later her bowels moved and her further convalescence

was uneventful. This procedure was unfortunately not followed in the case of the other patient, who was simply stimulated and made comfortable. This patient died twelve hours later. During the time that has elapsed since these patients were treated, intestinal paresis as a factor in the mortality of the patients upon whom I have performed abdominal operations has disappeared. It is not at all difficult to differentiate between the nausea following the administration of an anesthetic and this condition. In private practice in New York we induce the anesthetic state first with nitrous oxid, following this with ether, seldom using more than three or four ounces of ether for an operation lasting one hour, and seldom exceeding six ounces when the operation lasts for two hours, with an expert anesthetist. Using a closed inhaler it seldom requires a larger quantity of ether for the time mentioned, than when no gas is used. As a rule, little or no nausea follows, but here is the point: The vomiting which follows the administration of an anesthetic is preceded by distinct distress and nausea, whereas in intestinal paresis the contents of the stomach is ejected from the mouth without force and is not preceded by nausea or colicky pain. If the operation has been difficult and prolonged and the intestines are handled considerable, there will often be found eighteen or twenty hours after the operation that the patient has no desire for liquids, and that she is spitting up or regurgitating fluid which is at first white, then yellow, and which gradually becomes darker in color until it is nearly black, the diagnosis becoming graver as the color of the ejected fluid darkens. If no treatment is instituted in six or seven hours from the beginning of the trouble—or in twenty-four hours after the operation—the patient will ordinarily be in a hopeless condition and beyond the aid of treatment. My experience in the treatment of the condition under consideration has seemed to prove that the best remedy in the early stage of the disorder is the administration of a seidlitz powder, as described in my paper; the contents of the blue paper being dissolved in a tumbler nearly full of water, and the contents of the white paper being dropped on the surface of the solution just at the moment that the patient is ready to drink it. Therefore, if eighteen or twenty hours after the operation I find my patient unwilling to take liquid nourishment or water, I at once give the seidlitz powder; if this is retained, an hour or an hour and a half later I give the patient a tumbler of hot peptonized milk, following this the bowels usually act quickly, and the following convalescence of the patient is uneventful. I have had no experience with distention of the intestines coming on ten days or so after the operation.

I do not believe in over-medication, or the excessive use of cathartics. But I do believe fully in the necessity of the careful preparation of the patient for the operation whenever it is practicable, and that this preparatory treatment has much to do with the low rate of mortality—a fraction of 1 per cent., I believe—which has followed my operative work in the abdominal cavity for chronic conditions, for a number of years past.

THE INFLUENCE OF BILIARY ACIDS ON SURFACE TENSION.

A PRELIMINARY REPORT FROM THE CLINICAL LABORATORY OF THE DENVER AND GROSS COLLEGE OF MEDICINE.*

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DENVER.

Hippocrates noticed that when vomited matter comes in contact with marble it effervesces. It took more than twenty centuries to find the explanation of this phenomenon—namely, that marble, calcium carbonate, an alkali, dissolves with effervescence in stomach contents containing an acid.

We wonder how such an acute observation of a master mind could have lain dormant so long, and had to be rediscovered. In order to keep up our dignity we plead that we are not to blame for this oversight; forsooth, Hippocrates recorded his observations in Greek, and did not provide his works with a comprehensive index. What excuse, however, can we plead in the following case, not a hypothetical one? Here is a book written in the English language, used as a text-book in hundreds of medical colleges in England and the United States, studied by thousands of students during the last two decades, and this text-book records in clear and unmistakable terms, a remarkable observation, which nevertheless has escaped the attention of the professors, students and the medical profession at large, and which had to be brought to our cognition through the medium of the French language, only about a year ago! Let me relate this case of literary amblyopia:

Two papers appeared in the *Journal de Physiologie et de Pathologie General*, in 1901 (tome iii, pp. 99, 151; ibid., p. 461), by Frenkel and Cluzet, and Chauffard and Gouraud respectively, in which a new test for bile acids in urine is described. The discoverer of the test is supposed to be a man named Haycraft. The test is a simple one. It consists in sprinkling flowers of sulphur on urine, and if it contains bile the sulphur will sink to the bottom. This phenomenon attracted a great deal of attention, and the question naturally arose: Who is Haycraft? It took about one year to find out that Haycraft was a myth and that the author of the observation is Matthew Hay, professor of legal medicine in Aberdeen, and furthermore, that this observation is recorded as a private communication on page 294, in the "Text-Book on Human Physiology," by Landois and Stirling, second edition published by Blakiston's Son & Co., 1886, and in a somewhat abbreviated form in all subsequent editions. Thus it will be seen that an observation made by an Englishman, and recorded in a text-book that was before the medical profession for sixteen years, had to come back to us percolated through the French language and in the form of a stunning discovery of a man named Hayseed or Haycraft. Who knows how many more valuable observations are contained in our text-books which we know not? Verily, we have eyes and see not.

From the time I learned of this test from an abstract in the *Progres Medicale*, about a year ago, I have made numerous experiments on urine, and have applied this test to the study of bile acids in feces and stomach contents. The more I study this phenomenon the more wonderful and inexplicable it appears to me. A pinch of flowers of sulphur thrown on water or bile-free urine will float for weeks on the surface. On the addition, however, of one drop of bile to a quart of water the sulphur will at once sink to the bottom. We are all so accustomed to the wonderful play of colors in our various qualitative analyses that we no longer stop to marvel at them, but this test is so different in its nature from all other known modes of analytical procedures, and its sensitiveness is so extraordinarily great, that it almost borders on the miraculous.

Permit me to present a summary of the investigation with this test. Professor Hay found:

1. The test is based on the law of surface tension.*

* Read before the Thirty-second Annual Convention of the Colorado State Medical Society, at Pueblo, June 24-26, 1902.

* The tension of a liquid by virtue of which it acts as an elastic enveloping membrane, tending always to contract to the minimum area. It is due to the fact that while molecules in the interior are attracted in all directions, and are thus in equilibrium, those on the surface have no neighbors outside to balance the attraction of those within and are consequently acted on by a

2. The reaction is due to the presence of bile acids and not to any other constituent of the bile.

3. One part of glycocholic or taurcholic acid in 120,000 parts of water lowers the surface tension of the water and sulphur will sink to the bottom.

4. No other substance in the body except soap has the same action as bile acids.

Since the original papers in the French journal referred to above are not accessible to me, I am obliged to draw on the editorial in THE JOURNAL of the American Medical Association (March 23, 1901, p. 820) for information relative to their investigation.

1. Acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives and analin also cause the sulphur to precipitate.

2. All fluids with a surface tension greater than fifty dynes per centimeter do not allow sulphur to fall, and in all fluids with a tension less than fifty dynes the sulphur rapidly settles.

3. Lycopodium bears the same relation to fluids with a tension of thirty dynes as flowers of sulphur to fluids with a tension of fifty dynes.

In my own experiments I have noted the following:

1. The specific gravity of the fluid has no influence on the accuracy of the test.

2. The reaction of the fluid has no effect on the test.

3. In order to obtain correct results, the fluid must be clear. Cloudy or turbid urine must be filtered.

4. The urine must be free from bubbles.

5. Urine examined immediately after it is voided gives invariably the reaction for bile. This was a source of great annoyance to me until I found out that heat reduces surface tension. The urine must, therefore, be cooled off before the test is made.

6. In several cases where the reaction for bile pigment by Gmelin's test could not be obtained, the presence of bile acids could be demonstrated by the sulphur test.

7. In a case of syphilis of the liver, the urine gave the reaction for bile acids.

8. The urine of several patients in advanced stage of tuberculosis, with swelling of the lower extremities, gave the reaction for bile acids.

9. The stomach contents of a patient which I removed on two consecutive mornings, and which consisted almost entirely of bile, did not give the sulphur reaction.

10. Urine of three cases of pregnancy in their sixth, eighth and ninth months, respectively, gave the bile acid reaction.

11. After having experimented with more than one hundred and fifty different powders, I have found that boracic acid, iodoform, acetanilid, salol, calomel, salicylate of bismuth and salicylic acid possess this properly as does sulphur, only in a feebler degree.

I shall not theorize as to the probable effect bile acids have on digestion by virtue of their ability to lower surface tension. I have not reached yet the point in my experimentation that will warrant the making of any positive assertion. I wish merely to call your attention to a new test for bile acids, the simplicity, accuracy and sensitiveness of which should gain for it universal application, and induce others to further investigation.

resultant force tending toward the interior. Surface tension is based on the law of capillarity, and those who wish to study the subject should consult the exhaustive bibliography and synoptical study, "References to Capillarity to the End of the Year 1900," by John Uri Lloyd and Sigmund Waldbott, Bulletin of the Lloyd Library, Pharmacy Series No. 1, 1902.

Clinical Report.

A CASE OF VICARIOUS MENSTRUATION FROM THE LOWER LIDS.

J. HERBERT CLAIBORNE, M.D.
NEW YORK CITY.

A young Jewish girl of 16 presented herself at the Vanderbilt Clinic on account of hemorrhagic spots under each eye. She was pale, flabby and badly nourished. In other respects she was well. She had menstruated for the first time at 13 years of age. Since the establishment of her menses she noticed every month, two or three days before her period, that a red spot would appear under each eye. The skin would become red, the blood would rise to the surface and finally ooze through and form a clot, which dried, resulting in a crust. This lasted during her period and disappeared gradually, so that in two or three days afterward the skin would be normal again. She also said the spots would occasionally appear two or three days after her menses and would disappear as usual.

There was a hypermetropia of a mild degree with normal vision. The interior of the eyes and the lids were normal and

she did not complain of any visual disturbance. There was atrophic rhinitis with deflected septum. Dr. E. B. Coburn examined her blood and found the blood count very near to the normal, although there was a diminished quantity of hemoglobin.

The bichlorid of mercury with the compound tincture of gentian was given in this case. Her general health was much improved in consequence without the above mentioned phenomena being in any way influenced. The accompanying photograph illustrates the condition. As a rule the spots are semilunar in shape, about three-quarters of an inch below the level of the inner canthus and one-third as long as the lower lid. Dr. Geo. B. McAuliffe has referred to a case similar to this in a review on ophthalmology, published in *The Critic*, but without details. On request Dr. McAuliffe was unable to give me reference to the publication in which the case was described. I have been unable to find any other similar case on record.

39 West 36th Street.

Epidemic Infantile Paralysis.—Something not yet understood by medical science is the occasional development of an epidemic of infantile paralysis. Such an instance lately happened in Gloucester, Mass., thirty-eight cases being noted within a radius of four miles.—*Clinical Review.*

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THEORY AND OBSERVATION IN MEDICINE.

The medical literature of this country, and for that matter of other countries also, consists of both the chaff and the wheat. Much of what is written is a mere repetition of previous work, much is pure speculation and the application of writers' theories and fads to medical subjects. A certain proportion only consists of original observations, and it is from this that our modicum of progress every year in medicine comes. This state of affairs would be discouraging, only that it is not true in medicine alone. In every science there is the complaint of the amount of writing done for the little advance gained. In every field of thought supposedly brilliant theories usurp the place of patient investigation. Any number of mare's nests are found and exploited every year. Hence despite the acknowledged value of scientific investigation, the popularity of the expression used by Amiel in the *Journal Intime:* "Science is a lucid madness occupied in tabulating its own hallucinations."

Theories fall and others rise perennially to take their places. The most striking feature in the history of medicine is the successive adoption of ever new hypotheses to accord with the scientific fad that is most prominent at the moment. Just a century ago almost to the year the great French physicist and physician Cabanis said in a review of the medical theories of his time that "every age has its peculiar taste and fashion. At different periods medicine has assumed the tone of the prevailing sciences. It has even endeavored to speak their language and to subject itself to the same rules so that it has passed successively through all the different systems that have acquired any degree of celebrity in the world."[1]

Cabanis' declaration is literally true. After Newton's discovery there was a iatro-mathematical period in medicine, especially noteworthy in England, when the reduction of therapeutics to an exact science through mathematical principles was the constant effort of the theorist. When Leibnitz ruled the world of European thought there was a period of iatro-philosophic speculation when metaphysics seemed to promise much for medicine. After the rising science of chemistry began to make itself felt, all vital reactions were explained on chemical grounds and the horizon of medicine seemed surely bounded by chemical principles. On the other hand, when physics began their notable evolution at the beginning of the present century, mechanical theories of life became predominant and therapeutics took on a physical character. It is not surprising, then, to find that the marvelous development of electricity and the successful elucidation of the chemistry of the carbon compounds should give us in our day a crop of theories as to life and health, each with a modicum of truth perhaps, but advanced as if they represented the whole field of vital activity and pointed to the only methods proper for the correction of its faults. It would not be surprising either to find that these theories so elaborately evolved would prove of as little practical value as have so many other medical echoes of current scientific thought in the history of medicine.

As a matter of fact the great mass of theorists in medicine have done little for science, but act as a brake on the wheels of progress. A distinguished medical professor of Bologna, when he heard that Harvey advanced as a proof of the circulation of the blood the fact that one could hear the heart beat, is said to have said: "Harvey may hear the heart beat in London, but we do not in Bologna." Engaged in his theoretic speculations he never even took the trouble to listen. When Auenbrugger made his demonstration of the value of percussion he practically dedicated his little book on the subject, the first important contribution to the modern science of diagnosis, to his master, Van Swieten, the head of the medical clinic in Vienna. Van Swieten wrote ten volumes of commentaries on medical subjects, two of them mainly concerned with thoracic disease, without even deigning to mention the great work of his pupil. Laennec fared some better, but received not nearly the honor that went to his contemporary Broussais the theorist, whose work, though not without its merits in a certain way, probably did more harm than good. Even in our own time Koch received all the honor at the Tenth International Medical Congress in Berlin, in 1891, while Ramon y Cajal, who brought with him to the congress his original demonstrations in brain anatomy that have since made him so famous, attracted no attention outside a narrow circle of nerve specialists.

It would be a priceless boon to medicine if the lesson could be learned that not brilliant speculation nor theories, however suggestive they may seem, are so much wanted as patient, painstaking observation. There are any number of subjects in which discoveries lie almost invitingly ready to be made. Within a few years a hospital interne, Dr. Head, has given us one of the most important series of clinical observations made in a half century by a careful investigation of the superficial skin areas that are affected sympathetically when pathological conditions develop in internal organs. Opportunities for original work are not lacking for those who seek them. Expensive laboratory equipments are by no means necessary. A wise German physician said not long ago: "The gun does not make the marksman, nor

1. Sketch of the Revolutions of Medical Science and Views Relating to Its Reform, by J. G. Cabanis, Member of the National Institute of France. London, Murray, 1806.

the laboratory the investigator." What is needed is patience and good will with the perseverance to follow up a subject until legitimate, practical conclusions are reached.

THE PATHOGENESIS OF CHOREA.

Although the bacteriologic proof is wanting, there is clinical evidence in favor of the infectious character of chorea. The mode of invasion of the disease, its seasonal prevalence, its self-limitation, its liability to recurrence, its occasional fatal termination, the endocardial and articular complications or associations, the postmortem findings in some cases, all point in this direction. It is true that in a number of cases lesions, sometimes macroscopic, at other times microscopic, have been found in brain and cord, but their exact relation to the clinical manifestations has not been entirely clear, while the results of such bacteriologic examinations as have been made are lacking in uniformity. Thus, certain bodies thought to be characteristic have been described as present in the central nervous system. Again, emboli have been supposed to result from the endocarditis and give rise to softening in the brain and spinal cord. Further, changes have been found especially in the ganglion cells of the cerebral cortex and considered as responsible for the symptoms.

To the inconsiderable number of fatal cases of chorea in which careful postmortem study has been made, Dr. M. Reichardt[1] adds two more. One of these occurred in a maid servant, 17 years old, who in the third week of an attack of articular rheumatism exhibited choreic movements and mental depression. The heart was enlarged to the right and a faint, soft systolic murmur was audible. Mental confusion developed suddenly, with restlessness, hallucinations and fear. The temperature rose and a state of fear set in, followed by complete loss of consciousness and death. The second case occurred in a girl, 15 years old, who had had a previous attack of chorea but a few months before. The movements were violent, the temperature was elevated and pulse and respiration were accelerated. The heart was enlarged and a loud, blowing systolic murmur was audible at the apex. The patient grew progressively worse and death took place suddenly and unexpectedly on the sixth day of the disease.

In both cases there were found on histologic study inflammation, hemorrhage and degeneration of nerve fibers in the central nervous system. The inflammatory process had involved the larger portion of the brain in varying degree, though not exceeding certain moderate limits, so that with a single exception macroscopic foci were not visible. In the one case the region of the central gray matter of the aqueduct of Sylvius and the left optic thalamus was the seat of marked disease and contained hemorrhagic inflammatory foci; and in the other the subcortical white layer was involved, with entire freedom of the basal ganglia. The ganglion cells everywhere were least affected and exhibited no definite change. The numerous hemorrhages, in part visible macroscopically, apparently distributed indiscriminately, were present throughout the brain, but accumulated especially in the situations presenting marked inflammation and also in the central gray matter and in the white matter beneath the ependyma of the ventricles. The fatty degeneration of the nerve fibers was in seat independent of the inflammatory process. It was wanting in the central convolutions and in large part in the internal capsules, but was present, in part in marked degree, in the optic thalamus, the posterior segment of the internal capsule and the transverse fibers of the knee of the capsule, as well as in the lateral white matter of the pulvinar. In the spinal cord the root fibers principally, as well as fibers in the anterior and lateral horns and isolated fibers in the posterior columns, were degenerated. The anterior and lateral columns were entirely free.

In the first case the heart was dilated and the myocarium hypertrophied. The mitral and aortic leaflets were the seat of numerous, small, recent, gray and grayish-red vegetations. Fluid from the cerebral ventricles proved sterile on culture, and no bacteria were found in the vegetations on the mitral valve, but staphylococcus aureus was obtained on culture from the heart's blood. In the second case the pericardium contained 40 c.c. of turbid, serous fluid with fibrinous coagula. The heart was dilated and the leaflets of the mitral valve were thickened and their margins the seat of pale, firm, nodular vegetations. Staphylococcus albus developed on culture from ventricular fluid and large numbers of cocci in masses and in chains were found in the endocarditic vegetations from the mitral valve, as well as emboli of cocci in capillaries, especially, however, the veins of the heart muscle of the left ventricle, and isolated incipient abscesses.

If any conclusions can be reached from the findings in the cases briefly recorded in the foregoing, together with such other evidence as is available, it is that chorea is an infectious disease, perhaps not dependent invariably upon the same micro-organism, but at different times due to different organisms. Neither is the seat of the lesion on which the symptoms peculiar to the disease depend clearly established, although it seems possible that this may be found in the basal ganglia and parts adjacent to them.

1. Deutsches Archiv für klinische Medicin, 72 B., 5, 6 H., p. 504.

DIPHTHERIA BACILLI IN WELL PERSONS.

In 1900 the Massachusetts Association of Boards of Health appointed a committee to consider the question of the presence of diphtheria bacilli in well persons as ordinarily understood so far as the throat and nose are concerned. The report of this committee is just at hand.[1] Without considering certain questions connected with the morphological appearances that are considered

1. Journal of the Massachusetts Association of Boards of Health, July, 1902.

as characteristic of the bacillus of diphtheria, suffice it to say that as regards the prevalence of the diphtheria bacillus in well persons the committee feels justified in the statement that in cities at least 1 to 2 per cent. of well persons among the general public are the carriers of certain types of bacilli. Furthermore, that where well persons are exposed to diphtheria, as in families, schools or institutions, the number of well persons harboring bacilli may range from 8 to 50 per cent. From animal and other experiments it seems that only a small percentage of the morphologically typical diphtheria bacilli found in well persons not recently exposed to the disease are virulent, but even the small proportion likely to transmit the disease constitutes an important factor in the actual spread of diphtheria. Inasmuch as persons with typical diphtheria bacilli in their throats are scattered among the general public to such an extent that in the larger cities there would be in all probabilities several thousand such cases, it would seem to be entirely impracticable to attempt to isolate the whole number, and this is one of the conclusions of this committee, provided that such persons have not, so far as known, been recently exposed to the disease. Wherever it happens that health officers or physicians learn of the existence of well persons harboring diphtheria bacilli it would be wise, of course, to give them full instructions in regard to the character of the secretions and to place a sense of responsibility on the infected person. In the case of well persons recently exposed to diphtheria in whom the bacilli are likely to be more virulent than in others the question is a little different. Even here isolation may be exceedingly difficult, and the committee does not see its way clear to make a definite recommendation in favor of isolation, but compromises by stating that infected persons in diphtheria families should not be placed under restrictions "except when it can be done without causing much friction or hardship, or unless the danger in any particular instance can be shown to be very considerable." The committee feels that it is advisable to keep children in infected families away from school and public places, that under similar circumstances the same would apply to teachers, nurses and others who come in close contact with children; that milkmen in whose households diphtheria is present should not be allowed to continue their business. When the disease appears in a community for some time free from it, then it would be advisable that all persons coming in contact with patients be isolated until shown free from bacilli. Much stress is laid on the value of education of the public to care for their persons and their secretions.

It will be seen that the committee has followed a middle course, considering on the one hand the various conflicting interests of the public and on the other those of the infected individual. We believe that the committee acts wisely in adopting this course. The profession is not yet willing to believe in Behring's dictum that isolation in diphtheria in reality is useless in preventing the disease because of the frequency of diphtheria bacilli in the well. We must know more about the virulence and the persistence of bacilli in the well before readjusting our prophylaxis according to Behring's ideas.

THE *X*-RAYS AND CANCER.

The Journal of Advanced Therapeutics, a publication largely devoted to the medical and surgical employment of physical agencies, electricity, *x*-rays, hydrotherapy, etc., editorially notices in its last issue that any adverse criticism of the therapeutic use of the *x*-ray is now rarely met in the medical literature. It argues for its early employment in malignant disease, without waiting for surgical results, and asks, why should not the *x*-rays preclude the knife? It does seem from the reports of specialists who have used these methods that there is a vast field for hopefulness in their employment and very little of any drawback to their use. Whether they will supplant surgery in cancer is another thing; at present there is no warrant for assuming that they will. But considering the well-recognized limitations of surgery in these cases we ought to welcome any agency that promises so much good as do the *x*-rays. That they have a powerful effect on the tissues is undeniable, and the evidence seems strong, if yet not altogether conclusive, that they have a selective action on certain morbid cell proliferations and that they check malignant growth, while their destructive action on surrounding healthy tissues is so much less that it can be safely considered as negligible when the beneficial effects are taken into account. Of course, every precaution should be taken to prevent untoward action, but it seems that exposures far short of affecting normal cells have a marked effect on cancer growth. Even if not curative the *x*-rays have a very decided palliative effect in many cases, reducing discharge, destroying offensive odor, relieving pain and generally rendering what remains of life more comfortable both to the patients and to those who have the care of them. If this alone was effected the *x*-ray would be an inestimable boon, but it seems that—with all due conservation—we can hope for still more. The well-known delayed effects of the *x*-ray may also come into play, and even if immediate results seem to be lacking there may sometimes be still a chance for later beneficial effects of the treatment. At least, this is strongly suggested by the experience of Dr. W. A. Pusey, in a case reported in THE JOURNAL, August 30.

It would be unreasonable to expect that every case of cancer will yield to the rays, yet we are justified in holding that, even with our present limited experience, the outlook for malignant disease is somewhat better since the introduction of this treatment. It does not appear that, when properly used, it is incompatible with other methods, and it may be that its greatest future usefulness will be as an adjunct to surgical measures. That its application requires caution and skill goes without saying, and the possibilities of harm from careless use must not be forgotten. There is much also to be yet

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learned as to the best methods and technic and its application to other than external growths or those accessible from the outside through the natural passages of the body may yet be somewhat questionable. There still remains the fact that this agency promises to be far more than a mere accessory to diagnosis, and that it may develop into a most important therapeutic resource for a class of disorders that have heretofore been considered as among the most hopeless with which suffering humanity can be afflicted.

AMERICA IN THE HISTORY OF MEDICINE.

Though it seems difficult in the light of the development of medicine as an experimental science to point out any definite practical value derived from the study of the history of medicine, still there is something more to it than the promotion of a mere leisurely culture. Osler, who is somewhat of an enthusiast on the subject, although he does not believe in adding any course on medical history to our present overcrowded curricula, finds it practicable to constantly introduce the historic standpoint in classroom and clinic.[1] A plea for such study is made by a contemporary[2] on the ground that a very desirable national stimulus is aroused by recounting national achievements. The many excellent papers emanating from the Johns Hopkins Historical Club have been well calculated to do just this for American readers. One finds his patriotism considerably stirred, for instance, by Tinker's paper[3] on American surgery, wherein we find enumerated the following twenty-three remarkably valuable surgical procedures originated by Americans: Introduction of general anesthesia; ligation of innominate common carotid, common iliac, subclavian, scapular side of scaleni; introduction of animal ligatures; treatment of aneurism by compression; nephrectomy; cholecystotomy; ovariotomy; introduction of nearly all methods of intestinal anastomosis now in use; introduction of proper treatment of appendicitis; excision of parotid; excision of superior and inferior maxillæ, clavicle, interscapulo-thoracic amputation; operation for osteomyelitis; drainage of brain abscess; manipulation in the reduction of dislocations; skin grafting; closure of defects in cleft palate; invention of the tonsillotome. This is a list well worth remembering in view of the fact that, as Tinker says, "Many American surgeons are quite familiar with the work of foreigners, but lamentably ignorant of that of their own countrymen. This is partly due to the fact that the Germans, French and English seem to take much more pride in achievements of their countrymen than we do in America, and partly because many in our country have neglected to properly record and report their cases. If we do not take pride in our own work we can not fairly expect others to do so."

THE DEATH OF PROFESSOR VIRCHOW.

The death of Virchow removes from the active rolls of science and the medical profession one of its greatest names. Many, perhaps the majority, would say without any reservation that his was the greatest name of all. We know what he was in medicine, but he was illustrious in other lines; his wonderful and versatile ability was not concentrated alone on scientific medicine; he was great as an archeologist and anthropologist and also as a statesman and philanthropist. From the revolutionary year 1848, when he first entered the political field, till his death his interest in public matters never failed, thus demonstrating that the highest scientific labors and attainments were in him perfectly compatible with active engagements in the highest duties of citizenship. What he has done for his country as a legislator is little known to most of those to whom his scientific reputation is familiar, and not all have even a comprehensive idea of the extent and range of his work as a man of science. It was a saying in Berlin that "when he died it would be found that he was not one but four men," and this is still more true for the world in general than for his own townsmen and countrymen. How he coördinated patriotism with scientific breadth of view is well known in many ways; he loyally served his country but refused to sever his scientific association with the French when requested to do so after 1870. His appreciation of the best work had no local limitations; he taught other countries than his own to recognize the merits of their own forgotten discoverers, and he could be an unsparing critic when he thought his countrymen produced unworthy work. His sharp arraignment of German literary methods two or three years back is a well-known example. No one could question his patriotism—his services so long given to his country were evidence of that—but he was above the narrowness that even the pursuit of science does not always eradicate in its workers. The whole world came to delight to do him honor during his illustrious life, and now that he has passed away full of honors and years his memory will live after him.

1. British Medical Journal, July 12, 1902.
2. Ibid. Nov. 9, 1901.
3. Bulletin of Johns Hopkins Hospital. Aug.-Sept., 1902.

Medical News.

DISTRICT OF COLUMBIA.

New Medical Building.—Work has been begun on a new medical hall for the National University. It is to be constructed of brick and stone and will cost about $50,000. The plans provide for a dispensary, three lecture and clinic halls and the smaller recitation and study rooms needed for the medical and dental departments of the university.

Surgeon General Forwood Retires.—Brigadier General William H. Forwood, surgeon general of the army, closed his active military career September 6 by operation of law on account of age. He was relieved of his duties at the head of the medical department of the army September 8 by Brigadier General Robert M. O'Reilly, who was appointed by the President several weeks ago.

Emergency Hospital Report.—The annual report of this hospital shows that 12,446 patients were received, but only 68 deaths occurred. During the year there were treated in the dispensary 7211 new cases and there were 23,345 revisits for treatment. Of these patients 739 required surgical operations and 35,204 prescriptions were issued to the patients. In the emergency department there were 5235 new cases and 4282 revisits, making practically 9517 cases treated in all. Of these cases 1921 required operation.

Typhoid in the District.—According to late reports there are now 331 cases of typhoid fever under treatment in the District of Columbia, but during the last week there were only 6 deaths from the disease. The water generally used by the people of Washington comes from the Potomac River, the intake being at a point about sixteen miles west of the city, be-

low the mouth of the Shenandoah. Frequently after heavy rains, the water is cloudy and even muddy. The project of installing a great filtration plant has been agitated for a long time, but Congress has not provided the necessary means. Regulations governing the milk supply, more stringent than those of almost any other city, are enforced by the District government. It is believed, however, that the present epidemic of typhoid fever may be due to some common source of contamination in milk sold in certain quarters of the city, and an effort will be made to locate the source.

ILLINOIS.

Addition to Hospital.—A $75,000 addition is being built to St. Anthony's Hospital, Rockford, which will add 40 beds to the capacity of that institution. The new building will be ready for use about Christmas. The hospital is under the management of the Franciscan Sisters, who have seven other hospitals distributed through the states of Illinois, Iowa and Michigan.

To Determine Pollution Question.—For the purpose of determining to what extent the waters of Lake Michigan are polluted, not only by the sewers of Chicago, but by those of every other town along the lake shore from the Wisconsin to the Indiana state line, the State Board of Health is having made an exhaustive series of analyses of the lake water. Samples of the water are being collected under all possible conditions, and the work is carried on by bacteriologists of high repute. This action on the part of the state officials is undertaken largely on account of the present epidemic of typhoid in Chicago.

Chicago.

Personal.—Dr. M. L. Harris left for Wyoming, September 10, for a hunting trip. He will return early in October.——Dr. and Mrs. Julian E. Hequembourg have returned from their summer on the Massachusetts coast.

Miller Fined But Continues.—O. E. Miller, the head of the society whose hospital for inebriates was burned in June last, was fined $100, September 5, for practicing medicine without a license. The institution, nevertheless, is still in operation.

Accident to Dr. Steele.—Dr. D. A. K. Steele, president of the College of Physicians and Surgeons, is under the care of fellow members of his profession at his home, 2920 Indiana avenue. His right leg was broken while he was trying to board a car near his residence on September 5.

Prophylactic Aphorisms.—The Department of Health, in view of the typhoid situation, promulgates anew the following rules: Sterilize all drinking water; Pasteurize all milk and cream; keep flies from all food supplies; thoroughly wash in sterilized water all fruit and vegetables intended to be eaten raw and disinfect instantly all discharges of every description from those sick with typhoid.

The City's Deaths.—The 524 deaths from all causes reported during the week ended are ten fewer than the number for the week previous, but forty-one in excess of the number reported in the corresponding week of last year. The death rate per annum, per 1000, was 15. Aside from the typhoid situation the public health is satisfactory, a result largely due to the low temperature and increase of sunshine, the effects of which are chiefly seen in the mild character and low death rate of the diseases of infancy.

Water Analysis for Schools.—The Board of Education has decided to have comprehensive analyses made of the city water supply to determine whether it can safely be used by children in the public schools. Dr. John H. Long of the Northwestern Medical School will have charge of the work, and the bacteriologic examinations will be made by Professor Zeit of the Northwestern Medical School and probably by Professor Jordan of the University of Chicago. Samples of water will be taken from schoolhouses furnished with water from all the lake cribs. The work will take several weeks.

Delays Are Dangerous.—The Health Commissioner believes that as parents are compelled by law to send their children to school, it is the duty of the Board of Education to provide pure water for the children. The idea of individual children carrying bottles of sterilized or distilled water to the classroom is paltering with a serious matter. It is a demonstrated fact that typhoid fever is more prevalent in Chicago than it ever was, except in the epidemic years of 1890-'91-'92. There were 194 deaths from typhoid in August, which is the highest August record ever made by the disease in the city's history. In the first six days of September there were forty-eight typhoid deaths; in the first six days of August, twenty-two—an increase of nearly 120 per cent. The Board of Education should face these alarming conditions squarely and at once. Delay is dangerous. The situation demands immediate action.

The Increase of Typhoid.—Since August 2 there have been 249 deaths from typhoid fever. The disease is spreading to every quarter of the city, and the water supply from all sources is so frequently and so generally polluted that the Health Department deems it proper to refrain from characterizing any supply as "good" on any given day. There is nothing mysterious about this increase of typhoid. It is due to the polluted water supply. What is puzzling is the fact that the supply should be so polluted during unusually dry weather. Nearly eight years' continuous observation of the water supply and the conditions affecting it during which upward of 160,000 chemic and bacteriologic examinations have been made, by acknowledged experts, had resulted in the formulation of a belief in the laboratory that rainfall was the most potent factor in the pollution of the city water. Heretofore in dry weather the water was uniformly "good"; heretofore a rainfall of three-quarters of an inch in twenty-four hours—a quantity sufficient to flush out the sewers—was uniformly followed by water pollution. And such pollution was as uniformly followed by an immediate increase in the intestinal-disease deaths and later by an increase of typhoid—the former culminating, unless there was an intercurrent pollution, in about two weeks and the latter in about five weeks. For years charts have been constructed in the department showing the relation of these three factors—rainfall, water pollution, increased death rates from the impure water diseases—and they have followed each other, up to the present time, with what the *London Lancet* has styled "almost mathematical precision." But during August, 1902, and thus far in the present month there has been no sewer-flushing rainfall, the greatest amount in twenty-four hours having been only 0.57 of an inch August 13, and the total for the whole month being little more than one-half the average quantity during the last fifty-three years. Yet the water has averaged worse than during any August since these observations were begun.

MARYLAND.

Baltimore.

Faculty Changes.—Dr. John G. Jay has resigned the chair of surgery and Dr. Joseph T. Smith that of materia medica and the deanship in the Woman's Medical College.

The Baxley Professorship.—In the August 23 issue of THE JOURNAL, the Baxley Professorship of Pathology at Johns Hopkins was incorrectly announced as the "Boxley Professorship."

Typhoid Fever.—There were 38 deaths from typhoid fever in August out of a total mortality of 915. This is an unusual mortality. Forty-seven new cases of typhoid fever were reported for the week ended August 30 with 15 deaths and 90 new cases for the following week, with 10 deaths.

Personal.—Health Commissioner Bosley has returned from a visit to Nova Scotia.——Dr. Reid Hunt, associate professor of pharmacology at the Johns Hopkins Medical School, sailed for Europe, August 30.——Dr. James Bordley, Jr., of Baltimore, has been appointed professor of ophthalmology and otology in the Woman's Medical College.——Dr. Howard D. Lewis has been appointed health warden in place of Dr. Campbell F. Flautt, resigned.——Dr. Charlotte Murdoch has returned from a visit to Dr. Howard A. Kelly's hunting camp in Canada.——Dr. William Osler is at Point-a-Pie, Quebec.

Isolation of Bacillus of Infantile Diarrhea.—Dr. William H. Welch, director of the Rockefeller Institute for Medical Research, announces a discovery which promises to be of illimitable value as regards the prevention and treatment of intestinal diseases of children. After years of investigation and study the bacillus of infantile diarrhea has been isolated as a result of work recently carried on at the laboratory of the Thomas Wilson Sanitarium for Children, at Mount Wilson, ten miles from Baltimore. The organism found was identical with that which causes acute dysentery in adults. The investigation was conducted at the sanitarium by Charles W. Duval, of Annapolis, Md., a senior student at the University of Pennsylvania, and Victor H. Bassett, of Aledo, Ill., a senior student of the Johns Hopkins Medical School and pathologist to the Wilson Sanitarium. The opportunities for studying summer diarrhea have been particularly favorable at the Wilson Sanitarium, where each year during the warm months from 300 to 400 children suffering with intestinal trouble are treated. Out of

50 cases the specific organism was found in 42. It was observed that the blood of the patient had the property of clumping the germ isolated, just as blood serum in typhoid acts upon the typhoid bacillus, and this was a great help in identifying the germ, for the blood of the patient affected no other organism in a similar manner. The cases investigated represented all varieties of the summer diarrhea of infants, except cholera infantum, of which there were no cases at the sanitarium this summer, and in every case the organism found to be present in the secretions was identical with that which produces acute dysentery in adults.

MICHIGAN.

Burglars Shoot Physician.—Dr. Orletus P. Eaton, Detroit, was shot in the right knee while resisting two burglars who held him up at midnight, August 21, in his drug store.

Detroit Hospitals Benefit.—By the will of the late Senator James McMillan Grace Hospital receives $60,000, and the Home for the Friendless, the Woman's Hospital and Foundlings' Home, the Children's Free Hospital Association and the Little Sisters of the Poor receive each $1000.

Michigan to Missouri.—Dr. Guy L. Noyes, demonstrator of ophthalmology at the University of Michigan, has been appointed professor of ophthalmology at the University of Missouri, Columbia, and Dr. Clarence A. Wood, assistant professor of pharmacology at Ann Arbor, has received the appointment as chief of staff of the hospital connected with the University of Missouri.

Personal.—Dr. E. B. McDaniel, Crystal Falls, will leave for Pekin, China, early in October. He goes out under the auspices of the Presbyterian Board of Missions.——Dr. Robert C. Bourland, for three years instructor in anatomy in the University of Michigan, Ann Arbor, has resigned and returned to his home in Peoria, Ill.——Dr. Joseph C. Tufford, Owosso, returned, September 1, after three months of study and travel in Europe.——Dr. Joseph A. Crowell, Iron Mountain, has been appointed surgeon-in-chief of all mines operated by the Oliver Iron Mining Company.

The Most Dangerous Communicable Diseases.—Meningitis was reported present during August at 13 places; whooping cough at 39 places; diphtheria at 41 places; smallpox at 50 places; measles at 56 places; scarlet fever at 92 places; typhoid fever at 148 places, and consumption at 227 places. Reports from all sources show meningitis reported at 2 places more; whooping cough at 13 places less; diphtheria at 10 places less; smallpox at 63 places less; measles at 62 places less; scarlet fever at 8 places less; typhoid fever at 63 places more, and consumption at 30 places less in August than in the preceding month.

Comparative Morbidity for August.—For August, compared with the preceding month, diarrhea, neuralgia, cholera morbus, cholera infantum, dysentery, influenza, typhoid fever, inflammation of kidney, inflammation of bowels and remittent fever were more prevalent; and pneumonia, measles and diphtheria were less prevalent. For the same month, compared with the average for August in the last ten years, scarlet fever, pleuritis and smallpox were more than usually prevalent; and cholera infantum, consumption, dysentery, intermittent fever, inflammation of bowels, remittent fever, measles and diphtheria were less than usually prevalent.

MINNESOTA.

Personal.—Dr. Samuel F. Hance, Minneapolis, after nearly thirty years of practice in that city, has moved to Fairport, N. Y.

Contagious Ward Opened.—The new contagious ward at the City Hospital, Minneapolis, which has just been completed, was opened to the public, August 28.

Minnesota Mortality.—The report of the State Board of Health for July shows a death rate of .64 per 1000, 1135 people out of a total of 1,751,395 having died during the month. The death rate in cities of more than 2000 inhabitants was 1.01 per 1000; in other parts of the state it was .44 per 1000 for the month. Tuberculosis caused 143 deaths, only 57 of which were outside the cities. Pneumonia caused 46 deaths, diphtheria 3, and cancer 50.

Health Officer Sustained.—The trouble at Hopkins, on account of the scarlet fever epidemic, is practically settled, and Dr. Catherine A. Burns, who as health commissioner of the town ordered the quarantine, is victorious. City Physician Kistler of Minneapolis found the condition at Hopkins as Dr. Burns had stated, and the contention of other local physicians that the epidemic was only German measles, has been disproved. The citizens are now ready to obey the regulations of the State Board of Health.

Physician Exonerated.—In the case of Margaret K. Martin, appellant, against Dr. Walter Courtney, Duluth, for malpractice, the case having been brought from Sherman County, the Supreme Court has sustained the finding of the lower court, which was in favor of the defendant. Mrs. Martin's husband was injured in a railroad accident, and was attended by Dr. Courtney. He died from blood poisoning, and Mrs. Martin sued the physician for malpractice. The lower court found that the doctor was not guilty as charged, and Mrs. Martin appealed, the case now being finally settled by the Supreme Court.

MISSOURI.

Personal.—Dr. Samuel P. Stafford, St. Louis, has been appointed physician at the Yakima (Wash.) Indian Agency.——Dr. Rutherford B. H. Gradwohl, St. Louis, has been appointed assistant chief of the Pathologic Division of the Bureau of Animal Industry in the Department of Agriculture, Washington.

The Kyger Resolutions.—The Kyger resolutions for the abolition of the newspaper publication of personal medical advertisements and advertisements of a vile and indecent nature, which have already been noticed in THE JOURNAL, were unanimously adopted by the Colorado State Medical Society at its recent meeting in Denver.

Hospital President Fined.—Leon H. Jordon, president of the new John Lange negro hospital, Kansas City, was fined $350 at a special session of the police court September 3, for violating the city ordinance passed during the summer of 1901 regulating private hospitals. The ordinance requires that the management of a private hospital furnish the Board of Health with the name of the hospital, its purpose, its location, and the names and addresses of its officers, owners and managers, and must be established only with the board's approval and consent. The defense was that the hospital was public and not subject to the law.

The Louisiana Purchase Exposition.—The director of the Department of Liberal Arts, John A. Ockerson, St. Louis, has issued a prospectus showing the nature of the exhibits desired. Those which come within the scope of medicine and surgery are as follows:

Appliances, instruments and apparatus for work in anatomy, histology and bacteriology; apparatus for sterilizing instruments and appliances for dressing wounds; instruments for general and special medical research; instruments and apparatus for general, special and local surgery; appliances for dressing wounds; apparatus for plastic and mechanical prothesis, orthopedic apparatus, apparatus for hernia, medical gymnastics, material, instruments and apparatus for special therapeutics; instruments and apparatus used in the practice of dentistry; appliances for the use of the infirm, of invalids, and of lunatics; artificial limbs; instrument and medicine chests for army and navy use; appliances for rendering aid to the wounded on the field of battle, and in case of accident; ambulance service, etc.; appliances for rendering aid to persons apparently drowned or asphyxiated, and instruments and appliances for veterinary surgery.

St. Louis Health Department Report.—In the fiscal year ending March 31, 1902, according to the report of Health Commissioner Starkloff, there were 10,601 deaths, 754 more than in the previous year, representing a mortality rate of 17.12 per 1000. The largest death rate was in June, July and August of 1901, there being 637 more in those months than in the same period of the preceding year. The increase is charged to the hot weather of last year. Diphtheria mortality dropped from 344 to 259. There were 159 more deaths from consumption last year than in the year previous. The unsanitary state of the drinking water of the city has been proven by analytical examination and the large number of typhoid cases. The mortuary records for last year would show 3500 or 4000 deaths from typhoid had all the cases of that class been reported. According to this estimate, there would have been 34 deaths from typhoid to 100,000 inhabitants. The antitoxin investigation is reviewed without comment, as is also Dr. Starkloff's bill for a Missouri general hospital, which he had introduced into the legislature a year ago. The building of an institution for the care of feeble-minded and epileptic children is recommended. Vaccination is defended as a preventive of smallpox and other diseases.

NEW YORK.

Cornerstone Laid.—Governor Odell laid the cornerstone of the new Dobbs Ferry Hospital, August 29. In its private rooms and wards the new hospital will have accommodation for fourteen patients.

Deaths in New York State.—There were 10,938 deaths in the state in July, according to the bulletin of State Health Commissioner Lewis. The average number for the corresponding month for the past five years has been 11,581.

Albany Hospital Changes.—Dr. Gerald Griffin has resigned to enter practice. His place on the staff has been filled by the appointment of Dr. Fred S. Lettice, Sprout Brook, who was graduated from the Albany Medical College last May.

Dr. Mann Made Honorary President.—During the sojourn of Dr. Matthew D. Mann of Buffalo in Europe he will attend the International Congress of Obstetrics and Gynecology at Rome. Dr. Mann has been elected an honorary president for America at this congress.

Buffalo Personals.—Dr. Herbert U. Williams, is in Europe. ——Dr. George Y. York has returned from a two months' vacation in Europe. Dr. Max C. Breuer, who is in Breslau, is expected to return September 18.——Dr. S. S. Green has returned from a month's fishing trip in Upper Canada.

Nurses Demand Recognition.—The New York State Nurses' Association demands legislation recognizing nursing as a profession. Legislation will prevent the probationer or pupil dismissed for unfitness from donning a uniform and calling herself a trained nurse, thus imposing on the public and endangering the lives of the patients.

Personal.—Dr. Nestor Ponce de Leon has been appointed medical inspector for the port of Havana, Cuba.——Dr. Hobart Cheesman sustained a severe scalp wound and a probable fracture of the skull, September 3, in a street-car accident.——Dr. Jesse T. Duryea, Brooklyn, superintendent of the Kings County Hospital, has resigned, to take effect November 1.

Anti-Malaria Propaganda.—The New York City Department of Health is devoting special attention to malaria, which President Lederle thinks may be more prevalent than the records of the department indicate, owing partly to the failure of physicians to report cases, and partly, perhaps, to the reporting of malarial cases under other names through mistakes in diagnosis. It is the earnest desire of the Department of Health to acquire all possible information as to the occurrence and distribution of malaria in New York City, with a view to its eventual stamping out, and physicians are requested to notify the department of all cases of malarial fever coming under their observation. Information is desired regarding the location of the fever, so that as far as possible proper measures may be taken to correct the unsanitary conditions which produce it. Malaria is always transmitted by means of the bites of certain mosquitoes (anopheles), which can be located and identified with comparative ease, and their breeding places found. In the majority of instances the occurrence of a case of malarial fever in a given locality means the existence of a breeding place of the anopheles mosquito close at hand. The investigations, therefore, will be with reference to the source of infection, the breeding places of the mosquito. To facilitate the desired notification of malaria by physicians, special postal cards have been prepared, and a supply of these cards will be sent to any physician on request. In return for such helpful co-operation on the part of physicians, the Department of Health will make free microscopical examinations of the blood for malarial parasites a part of its routine work.

WASHINGTON.

Pullman Hospital.—A hospital has been opened in Pullman under the charge of Dr. W. W. Webb, for the use of the profession of Pullman, Albion and Colton.

Dr. Thomas Wins.—Dr. Charles P. Thomas, Spokane, has been given the verdict in the damage suit for $30,000 instituted against him by W. R. Scott for criminal assault.

Personal.—Dr. Charles S. Kalb has resigned as health officer of Spokane and Dr. DeWitt C. Newman has been appointed to the position.——Dr. George W. Farmer, Hillyard, has been appointed assistant superintendent of the Eastern Washington Hospital for the Insane, Medical Lake, vice Dr. W. J. Howells, made superintendent.——Dr. Homer J. C. Birney, Whatcom, is taking a course of hospital work in London, Berlin and Vienna.

WISCONSIN.

Hospital Changes Owners.—Dr. Fred N. Brett, Green Bay, has purchased the Green Bay General Hospital and has equipped and will operate it as an institution open to any physician for the care of his patients. There are to be no wards, but each patient will have a room.

Doctors and Nurses Resign.—Four employes at the Milwaukee County Hospital, including one interne, one assistant physician and two nurses, have handed in their resignations and they have been accepted. The superintendent of the institution states that the employes had been delinquent in observing the rules of the institution pertaining to the hours which should be kept and that the violation of these rules unfitted them for duty.

Personal.—Dr. H. P. Conway has completed his service as interne in St. Mary's Hospital, Minneapolis, and has located in Spring Valley.——Dr. Daniel W. Harrington, Oshkosh, will move to Milwaukee early next month. He has been appointed to the chair of biology and physiology in Milwaukee Medical College.——Drs. W. F. Beutler, superintendent of the Milwaukee Hospital for Chronic Insane, and Moses J. White, superintendent of the Milwaukee Hospital for the Insane, Wauwatosa, have returned from an extended European trip.

GENERAL.

Dr. Herman Commended.—Col. Maus, chief health inspector of the Philippines, highly commends Dr. M. Herman, a medical inspector of the Board of Health, for his able work. He has taken the place of the late Major Meacham, who was next in authority to Col. Maus.

CANADA.

Hospital Gifts.—$3000 has been sent to the Endowment Fund of the Montreal General Hospital. The doner asks that the gift be credited to "Anonymous." Lords Strathcona and Mount Stephen of Montreal has contributed the princely gift of $80,000 yearly to London, England, hospitals.

Physical Culture for Ontario Insane.—The Hon. J. R. Stratton, Provincial Secretary for Ontario, under whose direction are the insane asylums of the province, has decided on a complete re-organization of the system of instruction at the Orillia Asylum. He will introduce a course of physical culture in order to develop both body and mind. The Orillia Asylum is for idiots only.

Appointments.—The appointment is announced of Dr. G. H. Merrill of Montreal, to become assistant surgeon at the Hotel Dieu Hospital, to succeed the late Dr. J. A. S. Brunelle. Dr. Merrill is at present assistant professor of clinics at Laval University. He was graduated from the Victoria School of Medicine in 1876. Dr. C. W. Hopkins has been appointed house surgeon at the Montreal Maternity Hospital.

Calgary's Climate Cures Consumption.—Dr. James Stewart, Montreal, professor of medicine in McGill University, has returned home after an extended tour of the Canadian Northwest Territories. He was very much impressed with the climate round Calgary and believes that that section of the Dominion along with certain parts of British Columbia offer as good opportunities as any other climate in the world for the cure of consumption. The neighborhood of Calgary would be a very fine location for a large sanitarium.

Personals.—Dr. M. A. Curry, surgeon to the Coronation Contingent, has returned to Halifax.——Dr. J. A. McKenzie, assistant medical superintendent of the Nova Scotia Hospital, will pay an extended visit to the New York hospitals.——Dr. A. Donaldson, Brockville, Ont., who accompanied the hospital corps to South Africa with the Canadian Mounted Rifles, has accepted a commission in the British Army and will not return to Canada.——Dr. F. Montizambert, Director-General of Public Health for the Dominion, is in the west for the purpose of inspecting the Williamhead Quarantine Station.

FOREIGN.

Milk for Liverpool Poor.—The city of Liverpool furnishes to the poor at a low price sterilized humanized milk.

The Czar's Physicians.—Twenty-four physicians attend the Czar of Russia. They are a physician-in-chief, ten honorary physicians and four honorary surgeons, two oculists, a chiropodist and an honorary chiropodist, two court physicians, and three specialists for the Czarina.

Memorial to Reil.—The famous German anatomist, Reil, was buried in his garden at Halle, the gift of the ruling sovereign. The garden now forms part of the zoological gardens and the National Association of Alienists has recently fenced it in and erected a memorial.

Deaths Abroad.—The sudden death is announced of the superintendent of the Paris "Assistance Publique," Dr. C. Mourier, in his forty-fifth year.——Also of Dr. A. von Remmert, surgeon general of the Russian army and body physician to the Czar.——Dr. P. Ploss, the professor of medical chemistry at Budapest, also died recently, in his fifty-eighth year.

Wiesbaden's Ozone Water Works.—Wiesbaden has completed its plant for the application of the Siemens' process of purifying water by means of the generation of ozone by electricity. The water trickles over gravel through air-tight towers, and the ozonized air is forced through it. The ozone is soon transformed into oxygen, and the water retains no trace of the purifying process.

London Birth Rate Less.—Sociologists have been disturbed by the vital statistics issued last week, showing a marked decline in the English birth rate. London shows a decrease since 1881 from 27.4 to 20.6 per 100 of married women under the age of 45. The decline is most noticeable in the fashionable quarters of the capital, while the slum areas are almost stationary. Outside of London the decline amounts to 25.8, against 30.3 in 1881.

Special Bottles for Poisons.—One of the last acts of the late superintendent of the Paris "Assistance Publique," which has charge of all the public hospitals, was to decree that poisonous substances must henceforth be kept in three-sided bottles or jars with a rough surface on two sides. By this means it will be impossible to mistake the dangerous bottles by day or night. The Lariboisière Hospital is to be equipped at once with the new bottles, and if they prove to answer the purpose the others will be supplied in turn.

Foreign Honors to American Surgeons.—Surgeon Oliver D. Morton, U. S. Navy, has been authorized to accept a present tendered him by the Emperor of Germany. Former recipients of honors were Assistant-Surgeon William J. Wilson, U. S. Army, a decoration from the Khedive of Egypt, for gallantry in battle; Surgeon-General Rufus Tryon, U. S. Navy, a medal from the government of Venezuela, and the late Medical Inspector, George Worth Wood, U. S. Navy, a decoration from the Queen of Hawaii.

Cholera in Egypt.—The total cases since the outbreak to August 25 were 3090; 2085 deaths; 294 cured. Minieh, Assiout and Ghizeh provinces are most seriously affected. Since the first few days of the appearance of the scourge at Moucha, and subsequently at Cairo, the rapid progress of the disease has been checked by the efficiency and extraordinary energy of the sanitary department, and the situation thus improved and made more hopeful. Turkey and most of the European countries have declared Egypt infected and imposed more or less severe quarantine restrictions against travelers and traffic from that country.

Arsenic Springs Poison Many.—It is reported that 20 are dead and over 400 seriously ill at Mapiami, Mexico, as the result of the breaking forth of arsenic springs in the mountains near the city. The waters of the arsenic springs have united with those of the springs which supply the city with drinking water and the distributing reservoir is said to be thoroughly impregnated with arsenic. It was some time before the source of the poison was ascertained. According to reports, by that time hundreds were ill all over the city and physicians were wired from all the surrounding mining camps and towns. The citizens are now suffering for want of water.

Cholera in Japan and China.—The epidemic of cholera is reaching alarming proportions on the other side of the Pacific. It extends from Java to Japan and almost every city on the coast and many from the interior are affected. The disease, too, is being contracted by Europeans as well as natives. In Hong Kong from the first of the outbreak to August 6 there had been 523 cases, six of the patients being Europeans, and 511 deaths, of whom four were Europeans. In Tientsin the last report placed the number of cases for the year at 1049 and 754 deaths within the city walls and 1015 cases and 593 deaths outside the city walls. In other places in China the proportion of cases and deaths is just as great. Dispatches say hundreds have died in Java and thousands in Japan.

International Congress of Gynecology.—Nearly fifty communications are on the program of this Congress which opens its doors at Rome, September 15. The first subject to be discussed is as announced, "Medical Indications for Inducing Artificial Abortion," and addresses are to be presented by Hirst of Philadelphia, Hofmeier of Würzburg, Pinard of Paris, Rein of St. Petersburg, Schauta of Vienna and Simpson of Edinburgh. The second subject is "Hysterectomy in the Treatment of Puerperal Infection," with addresses by Fehling of Strassburg, Leopold of Dresden, Treub of Amsterdam and Tuffier of Paris. "Tuberculosis of the Female Genital Organs" will be the subject of addresses by Amann of Munich, Martin of Greifswald and Veit of Leyden. The last question on the order of the day is "Surgical Treatment of Cancer of the Uterus," with addresses by Cullen of Baltimore, Freund of Berlin, Jonnesco of Bucharest, Pozzi of Paris and Wertheim of Vienna. The thirtieth professional anniversary of Professor Porro, September 11, was to have been celebrated as a special feature of the Congress with the dedication of a ward in the Sanatorium and of an orphan asylum at Salsomaggiore in his honor, and other ceremonies. The celebration will be carried out as planned, but will take the form of a memorial. Members of the Congress are invited to Salsomaggiore for these ceremonies as guests of honor, free of expense for transportation and at the hotel. The *Presse Médicale* has organized a special excursion to the Congress, leaving Paris September 8 and returning September 24.

Miscellany.

Benzine for Transient Redness of the Nose.—Bruck has noticed that the application of benzine for a few seconds will banish temporary erythema and render the skin less shiny. The application does not irritate the skin and can be used as a prophylactic measure under circumstances liable to induce erythema in the predisposed. It is applied on a gauze compress over the entire patch of hyperemia, avoiding friction.—*Sem. Méd.*, July 16.

Difference Between Intoxication with Illuminating Gas and Carbon Dioxid.—Ferchland and Vahlen describe experimental research on dogs and frogs which demonstrated that gas is incomparably more toxic than pure carbon dioxid, consequently the toxicity can not be due to the latter alone as the gas contained only 9.7 per cent. of the dioxid. They conclude their report in the *Arch. f. Exp. Path.*, xlviii, 1 and 2, with the remark that the substances in illuminating gas to which it owes its toxicity are still as much of a mystery as those to which it owes its odor.

The Reflexes from the Standpoint of Life Insurance.—J. Crocq of Brussels delivered an address on this subject at the Second International Congress of Medical Examiners, which was held at Brussels last September. It is published in full in the *Wiener Med. Wochenschrift*, 1902, Nos. 17 to 25. He asserts that the absence of knee jerk should entail rejection of the candidate, and the nervous system must be subjected to thorough examination in case this reflex is moderately weak or exaggerated. Exaggeration is usually due to an organic lesion, but sometimes occurs with a mere neurosis. Rejection should also follow marked weakness or absence of the pupil reaction. If it is sluggish the nervous system should be investigated. No examiner should neglect to seek for Babinsky's sign and the tendon clonus, and discovery of either of them forbids acceptance of the applicant, as also of the Argyll-Robertson sign and differences in the pupils of organic origin. The other reflexes are of comparatively minor importance.

Danger from Medicine Samples.—We are pleased to note that the dangers incident to the promiscuous distribution of samples of patent nostrums are coming to be generally recognized by the municipal authorities all over the United States. Recently the Municipal Assembly of St. Paul, Minn., passed an ordinance requiring all persons who desire to distribute samples of medicines to come before the council and obtain a permit and at the same time to submit a sample of the medicine to be distributed, to the health department for examination as to its character. We have frequently seen reports of serious results following the miscellaneous distribution of so-called patent medicines. These samples are frequently left on door steps and in the reach of children lacking discretion, who may and often do do serious injury to themselves through eating the samples. In view of the reputation for vigilance borne by the health commissioner of the City of St. Paul, we feel confident that this ordinance will be so administered as to be of great service in protecting the citizens of that city against danger from this source.—*N. Y. Med. Jour.*

Acclimation of the White Race in the Tropics.—Wulffert contributes an article on this subject to the last *Vierteljahrsschrift. f. off. Ges. Pflege*, xxxiv, 3. He asserts that whenever the habitual use of alcohol has shown any effect on the nerves

or muscles, the individual in question will find it difficult or impossible to live with safety in the tropics. Those intending to live in a tropical clime should train for it by years of severe manual labor or athletics in the open air, by restricting their diet to that recommended by Rubner of Cameroon in his work in *Archiv f. Hygiene*, xxxviii, p. 154, and by complete abstention from intoxicating liquors. Persons from the temperate zones should not go to the tropics expecting to till the soil. Native labor can be obtained for this, and white settlers should be overseers, superintendents, merchants, officials, artisans or soldiers, but not farmers. Rubner emphasizes the importance of water, especially with meat, to compensate for the absence of water in meat, and also for the salt eaten with it. On a diet of 16.7 calories from albumin, 16.3 from fats and 66.9 from carbohydrates, 1.803 gm. of water would be required for each calorie or 4327 gm. for 2400 calories, to which should be added 74 gm. to replace the water excreted in the feces on a mixed diet. This amounts to a total of 4401 gm., nearly four and one-half quarts of water a day, part of which can be taken in form of fruit.

Nitric Acid in Treatment of Gonorrhea.—Porosz attributes the curative effect of nitrate of silver to the nitric acid rather than to the silver, and has found the former alone extremely efficient. He injects or instills in chronic cases a .5 to 2 per cent. solution of nitric acid and in the acute form injects into the anterior portion of the urethra about 1 gm. of nitric acid in 300 to 400 gm. water. Two or three weeks complete the cure. He adds particulars in his communication to the *Wiener Med. Presse*, 1902, 10.

Ogata's Method of Reviving the Asphyxiated Newborn.—The Japanese medical journal, *Sei-I-Kwai*, xx, 8, contains a detailed description in English, with illustrations, of this method of reviving asphyxiated infants. It is now in current use in Japan, where the small rooms and low ceilings forbid the use of Schultze's swinging, and it seems from the report to be proving as effective as the latter. The legs of the child are held firmly in the right hand, the forefinger between them. The trunk of the child is then bent over as it is held in a sitting position, until the shoulders nearly touch the knees as the arms droop forward. The trunk is then bent back into the dorsal decubitus with the left hand, the arms falling free and opening the lungs. The trunk is then bent upward and forward again until the shoulders again nearly touch the knees. These movements are repeated regularly 8 to 10 times a minute and usually prove sufficient to induce natural breathing. But in severe cases, after the first and second movements, and while the infant is lying horizontally, the left hand is taken away from its back and the trunk is allowed to drop backward and downward with the arms flung wide, which expands the lungs to a remarkable extent. Ogata says of his method what Schultze said of his, that no one should venture to try it on the living subject or even to criticise it until he had done it a hundred times on the cadaver. He claims that it is very effectual and is much less distressing to an onlooker than swinging. It stimulates the circulation, especially in the medulla oblongata, the seat of the center of respiration. Ogata remarks in conclusion that "the apparent death of the newborn child from disturbance in the process accessing oxygen is one of the most discomfortable accidents that can happen during parturition," and he can confidently recommend his method for such cases after seven years of thorough testing and practical experience.

Mrs. Eddy and Common Salt.—Mrs. Eddy, she of the brilliant intellect and luminous diction, recently enriched the world with the following important item of information: "To quench the glowing flames of falsehood, once in about seven years I have to repeat this: that I use no drugs whatever, not even coffee, tea or red pepper, though every day, and especially at dinner, I indulge in homeopathic doses of common salt." Dr. Sweringen thus comments on the above in the *Chicago Clinic:* "I can not understand why Mrs. Eddy should indulge in common salt even in homeopathic doses, since in 'Jahr's Manual of Homeopathic Medicine,' of the edition of 1838, four and a half pages are devoted to the effects of common salt. Its mental effects are described as follows: 'Melancholic sadness, with searching for many unpleasant things, much weeping and increased by consolation, sorrowfulness about futurity, anxiousness also during a thunderstorm, chiefly at night, indolence, aversion to talk, joylessness and disinclination to labor, hasty impatience and irritability, easily frightened, hate of former offenders, fretfulness and disposition to angry violence, inclination to laugh, alternation of fretfulness and hilarity, great weakness of memory and forgetfulness, thoughtlessness and mental dissipation, misusing words in speaking and writing, inability to reflect and fatigue from mental exertion, awkwardness.' These are the effects which homeopathy attributes to common salt, which, if correct, will account for some of the idiosyncrasies, eccentricities, hallucinations, delusions, illusions, and peculiarities of Mother Eddy. I should advise her not to eat any more salt, even in homeopathic doses. It will certainly ruin her mental and physical constitution. We now know the cause of her 'thoughtlessness and mental dissipation and misuse of words in speaking and writing.' It is the use at dinner of homeopathic doses of common salt. Perhaps, if she should cease the eating of common salt, she would be better able to explain satisfactorily the occult, metaphysical intricacies of Christian Science." In our opinion, not only common salt but every bit of food these latter-day lunatics take is a direct contradiction to their tenets and a refutation of their belief in the non-existence of matter. But who would expect logic and consistency from lunatics?—*Merck's Archives.*

A Canadian's "Look-in" at the American Medical Association.—Saratoga—full of sunlight, smiling men and women meeting, greeting, and tarrying for half a week of days to attend the annual convention of the great American Medical Association. The Convention Hall is well arranged for its purpose, and blessed alike, these many moons, by meetings of Sunday School Alliances, Distillers, Sons of the Morning, Sons of the Evening (the names are not copyrighted), Jew and Gentile; in fact, all sorts and conditions of men, running the social gamut, all the way up to the splendid fifteen hundred Knights of the Scalpel, who delved into the deepest scientific problems all day, and dined and danced far into the night. Saratoga, although of late years very cosmopolitan, is diplomatic in the extreme. She knows whom she is welcoming, and arrays herself fittingly to entertain her guests. The enormous United States Hotel was "Headquarters," and to join in the throng of promenaders upon its spacious verandas and lawns, whose huge trees were ablaze with lanterns and devices of colored lights, and listen to the concert, band and vocal, arranged in honor of the delegates, was indeed a pleasure. To drive through old Saratoga's streets under the avenues of trees out to the various springs, and play "follow-the-leader," until at last the funny man of the party, as we drew up at still another Spouting Geyser, relieved our sense of polite obligation (the water was offered freely) by laughingly saying, "You may drive a horse to water, but you can't make him drink"—any more! Sometimes discretion is the better part of valor. The closing evening of the Convention, the President's reception at the United States Hotel, was brilliant in the extreme, the handsome drawing rooms flower laden, the beauty of the costumes of the ladies and the kindness of the unwearied greetings of Dr. and Mrs. Wyeth and Dr. Comstock (Chairman of the Reception Committee), made all present feel glad to be there. The museum of exhibits was also very fine, and the exhibitors vied with one another in courteous attentions to the visiting physicians. At the close of the meeting, as good-bye was said, all through the corridors echoed and re-echoed, "Till we meet again in New Orleans in May, 1903." Nothing succeeds like success, and the enthusiasm of the members carried all present alike in its flowtide of good fellowship, like a leaf on a stream. Never for a moment did the Canadian guest feel himself an alien, nor even a stranger, and he has carried home a lasting and delightful memory and a big ache in his wrist as a souvenir of the heartily extended glad-hand of his "brother chips," and in his heart old Jack and young Glory float side by side.—*Can. Jour. Med. and Surg.*

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Married.

ANTHONY L. RETTALIATA, M.D., to Miss Agnes M. Ryan, both of Baltimore, August 27.

W. B. KIRKPATRICK, M.D., to Miss Susie A. Brinley, both of Path Valley, Pa., August 15.

J. TALLEY SPENCE, M.D., Alma, I. T., to Miss Mary R. Brand, of Memphis, Tenn., August 30.

WILLIAM F. BERNER, M.D., Merrill, Iowa, to Miss Hannah Boubeck of Chicago, August 27.

ROBERT M. ANDREWS, M.D., to Miss Clara Louise Church, both of Bergen, N. Y., August 26.

ADAMS B. HOWARD, M.D., Cleveland, Ohio, to Miss Madge Armor of Wooster, Ohio, September 4.

LOUIS L. GILMAN, M.D., Rochester, N. H., to Miss Catherine Cunningham, of New York, August 11.

WALTER B. FOSTER, M.D., Richmond Ill., to Miss Clara Emma Marekhoff of Elgin, Ill., August 21.

GUY L. NOYES, M.D., Ann Arbor, Mich., to Miss Lucia Weigand of Traverse City, Mich., August 27.

JOHN J. FLYNN, M.D., Worcester, Mass., to Miss M. Agnes Sweeney of North Abington, Mass., August 27.

PORTER BRUCE BROCKWAY, M.D., Toledo, Ohio, to Miss Eva Marjorie Plews of Lake Linden, Mich., August 26.

Deaths and Obituaries.

THE DEATH OF PROFESSOR VIRCHOW.

Rudolf Virchow is dead. With his death on September 5, near the end of his eighty-first year, there passed away one of the most influential investigators, leaders, and teachers that medicine has known. The epochal significance of his great generalization and the basal importance of much of his work will make the name of Virchow forever prominent as are only a few in the history of the development of medicine. Endowed with a remarkable intellectual endurance he was permitted to continue his many-sided activity until well past the venerable age of four score. Some months ago he suffered an accidental fracture of the hip; from the effects of this—at that age—so ominous an injury, he apparently made a satisfactory recovery, but only to meet with a second and more serious accident that eventually led to his death.

Only the merest outline can be given at this time of the busy and eventful career of this versatile genius—pathologist, anthropologist, archeologist, hygienist and reformer. Born Oct. 13, 1821, in Schievelbein in Pomerania, he studied medicine in Berlin from 1839 to 1843, where he came under the lasting influence of Johannes Müller; in the fall of 1844 he became prosector under Robert Froriep at the Charité in Berlin, and in two years more the latter's successor. The direct outcome of this early work as prosector was a fundamental change in the technic of postmortem examination—producing eventually a technic that became the world's standard—and introducing a system of reliable autopsy records. Those who were privileged to witness these early autopsies were electrified by the secrets dead bodies were made to tell. In 1847 he and Benno Reinhardt founded the *Archiv für Pathologische Anatomie und Physiologie und für klinische Medicin*, commonly known as *Virchow's Archiv*, and since Reinhardt's death in 1852 conducted by Virchow alone. *Virchow's Archiv* is now running its 169th volume and forms one of the most important serials in scientific medical literature because of the many pioneer articles embodying the results of valuable original investigations, especially in the field of pathological anatomy and histology, that have been published in it. The influence this *Archiv* has had on the growth of scientific study in medicine can not be overestimated. Many of the earlier volumes have been reprinted again and again in order to fill the demands for complete sets in public and private libraries. The earlier numbers are especially valuable, too, because they contain many articles by Virchow himself in which he develops his views in regard to the state of scientific medicine in those days. In 1848 Virchow made a medico-sociologic study of a devastating epidemic of typhus fever in Upper Silesia, and in his report he fearlessly exposed the shortcomings of governmental officials and advocated radical reforms. He next joined in the publication of a periodical called *Medicinische Reform*, devoted to politico-medical reform measures and in which among other changes there was urged the establishment of a ministerial bureau for public hygiene. His active participation in the liberal movement connected with the revolutionary efforts of 1848 led to his dismissal from public positions in Berlin, and he accepted the offer of the chair of pathological anatomy in Würzburg, the university of which was the first to establish a full chair in this branch. Here he continued his investigations, interested himself deeply in the development of a scientific atmosphere in the university and in the matter of accurate municipal statistics of local diseases. He assumed co-editorship of Canstatt's Jahresbericht which since 1867 has been published by Virchow and Hirsch. In 1856 he was recalled to Berlin as Professor of Pathological Anatomy, General Pathology and Therapy and Director of the Pathological Institute, and here he remained until the end of his life. Only last year a magnificent new building was erected for his laboratory, and in order to house adequately the great museum that he had created during his long tenure of office.

While in Würzburg some of his more important original investigations were published, notably those on the chemistry and morphology of the blood and on thrombosis and embolism. The work on thrombosis and embolism is to a large extent experimental, and it constitutes the real starting point of our definite knowledge of these fundamental processes. In 1858 appeared his "Cellular Pathology," based upon lectures given to physicians especially, and long recognized as an immortal classic that virtually created a new era in medicine. The famous phrase "omnis cellula e cellula" "sounded the death-knell of the old humoral pathology and the birth of the new cellular pathology," which led to systematic study of the changes produced by disease in the constituent elements of the organism. Only in this way could it ever have been possible for the student to penetrate close to the real secrets of natural processes, pathologic as well as physiologic, and to arrive at general laws that would permit the formulation of scientific hypotheses in medicine. By means of the principle established by Virchow "all medicine came nearer natural processes by at least three hundred times" (Virchow), and pathology became that branch of biology which studies the disorders of cells and cell complexes. It is as the founder of cellular pathology, which Virchow himself was the first to recognize as the natural development and application of the work of his predecessors, especially Morgagni and Bichat, and of discoveries and generalization by investigators in other fields, that Virchow's name will ever remain an eminent landmark in the history of medicine. Medical men the world throughout are familiar with this aspect of his achievements. It is part and parcel of their medical education and thought, and though volumes could be written concerning the various phases of cellular pathology as it now presents itself in the light of developments that have taken place since Virchow retired from active investigation—it is now nearly half a century since he fought and won the battle for the principle of cell pathology—this is not the time nor the place for any extended discussion.

From the beginning of the publication of his *Archiv* in 1847 Virchow strongly opposed rationalism and empiricism in medicine, declaring that the time had come for the application of the inductive method to medical investigation. What was needed was close observation of individual cases by clinical and anatomical methods. In the very first volume, in the famous article in which he laid down the lines along which medicine was to advance—and along which it did advance—he says: "The filling of the clinical positions in a hospital has now become a matter of supreme importance because the clinician must be not only a scientific practitioner, but also an observer and investigator"—a remark of special significance when applied to American conditions to-day and to the discussions now carried on concerning the real university medical school. Virchow's organization of the teaching and investigation of pathologic anatomy was nothing less than masterly. It resulted in the pathologic institutes, or laboratories, which we

now know are indispensable for teaching and research. His official report to the government on the need and scope of such establishments with various subdepartments, like chemical laboratory, museum, etc., written in 1846, still remains worthy of study by those interested. Thus we see clearly that he was applying general scientific principles and methods to the study and investigation in medicine, and so successful were the efforts to put an end to the day of "systems" and dyscrasias that a few years later he felt encouraged to write: "The scientific method of medical research is firmly established. It is not my merit to have discovered it. Without me it would

have been found and the new trail would have been followed. But I trust the battle against the existing mixture of arbitrary rationalism and gross empiricisms, fought by the *Archiv*, in which I have aided by the introduction of genetic investigation, may have contributed much in procuring new aims for pathology."

Virchow became famous at a remarkably early age, and his fame soon passed beyond the confines of Germany. Before long students from other lands were attracted to him, and thus the waves of his influence were carried to all parts of the world. He had in full measure the enviable power of exciting an investigative spirit in his pupils. Von Recklinghausen, Klebs, Orth, Cornil, Reisz, Axel Key, Grawjtz, Cohnheim, who died all too soon, beside many, many more, have reached great prominence as teachers and investigators who carried the cellular principle of the great master to new centers, where its stimulating influence soon was felt. In 1863-67 he published his great work on tumors. Though never finished it remains to this day perhaps the most valuable work for consultation in regard to the subject. His literary activity assumed large proportions and he entered many other fields of knowledge than the purely pathologic. He became an authority in anthropology, and archeology, and achieved almost as great a reputation as writer and investigator among the workers in these sciences as he did in pathology in the minds of those who think of him as a pathologist only, and remain in ignorance of the versatility, one is tempted to say universality, of his genius.

There is one aspect of Virchow's work that merits special mention because of the example he here placed before scientific men and medical men in particular. We refer to his continuous activity, during his long life, in political and medicosocial matters. Virchow was a splendid example of the scholar in politics. Reference has been made already to his liberal tendencies and the fact that they brought him into

governmental disfavor. He was elected as Prussian representative in the lower house as early as in 1848, but resigned because not old enough to hold the position legally, a position to which he was elected again in 1862. Since 1861 he served continuously in the city council of Berlin. In 1880 he was chosen a member of the Reichstag, in which he continued to occupy a seat for many years, taking a most active part in the proceedings and remaining true to his liberal convictions always. He remained a politician in the highest and best sense of the word throughout his long life, and his political career alone would insure the handing down of his name to posterity. Although not a brilliant orator in the sense the word is used in America, his words—and he spoke frequently—were always received with attention by the Reichstag because of the wisdom, courage and moderation of his views. Virchow was Bismarck's most persistent and vigorous parliamentary opponent and was once challenged to a duel by the man of blood and iron, a challenge to which Virchow paid no notice. Science and good citizenship do not exclude each other, and the humanitarian side of Virchow's work is one of its most pleasing features and one worthy of emulation everywhere, not least in our own country. In his various public capacities he exercised an immense influence on legislation of various kinds, especially when it concerned matters of public health and sanitation and the relief of the oppressed and miserable. He said: "Humanism, in its true meaning, is no apotheosis of mankind—for that would be anthropomorphism—but the scientific knowledge of the manifold and various relations of the thoughtful individual man to the ever-changing world." It is this idea of humanism that led Virchow into so many politico-sociologic undertakings. And so he became great in science and citizenship.

Beginning with his study of famine and fever in Upper Silesia in 1848 and a little later in the Spessart mountains, we find that henceforth a large part of his time and literary activity is given to questions of social and hygienic nature. These investigations made clear to Virchow that he had a sociologic mission to obey. For did he not learn that an essential factor in the causation of this epidemic was the miserable social condition of the people and that the only remedy was radical social reform? This he lived to see realized in his own and other countries. He became one of the foremost authorities in Europe on matters relating to public hygiene and sanitation. His efforts led to sanitary improvements in Berlin that all in all involved millions of dollars and caused a complete change in the physiognomy of the city. He wrote on military hygiene, on school hygiene, on the German household, on the best forms of exercise, etc. The legislation in regard to infectious animal diseases, fisheries, etc., bear his hallmark. He himself spoke of this work as half-political and as a mixture of medicine and sociology, reiterating again and again the conviction that medicine and political legislation must be brought into the closest relationship if practical medicine is to exercise the influence it should upon important problems in the life of the people. The present system of hospitals and institutions of allied nature for which Berlin is noted is further permanent proof of his constructive activities. He helped to found, and lectured to, workingmen's societies.

Few, if any, scientific medical men have received so many demonstrations in compliment of their achievements and winning personality as Rudolf Virchow. His seventieth birthday was celebrated by the publication of three large volumes of original research by fifty-four of the most prominent medical investigators, most of them being former assistants. Virchow was a regular attendant upon numerous medical and other scientific societies and congresses. For a long period of years he succeeded himself as president of the Berliner medicinische Gessellschaft. At nearly every meeting of the International Medical Congress he was chosen to deliver one of the general addresses and his appearance always caused an outburst of spontaneous applause. He refused to return his French decorations and orders, pleading that science is catholic and knows no racial or geographic bounds. In Berlin, Würzburg and Nürnburg are streets bearing his name. He was honorary member of learned societies throughout the world. These demonstrations in his honor reached their culmination on Oct. 13, 1901, his 80th birthday. Not only in Berlin but in all scientific centers was this event appropriately celebrated. Virchow himself was the recipient of some 800 congratulatory telegraphic dispatches and addresses and diplomas without end, the medical profession of Austria alone sending him 80 such. Learned societies and corporations the world over vied with one another in showing him all possible honor. In this country several banquets were arranged at which Virchow's name and achievements were toasted and lauded. The honors heaped upon him by Germany itself through her government, the learned, political, communistic and other societies were phenomenal. The Emperor conferred upon him the highest order in Prussia. Especially touching and spontaneous were the evidences of friendship and gratitude brought by the common people from his place of birth and elsewhere. Even the children of his neighborhood joined in the celebration. But in his own words the pleasantest event to him of the whole celebration was a feast in a workingman's society of which he was a co-founder. His interest in the welfare of the masses seems to have been nearest his heart, and in reviewing the eventful week of celebration of his eightieth birthday he says: "Rely on the people and work for them and you shall not fail of reward, though the cessation of numerous activities, the disappearance of numerous persons, and the complete remodeling of public life, brings home the thought of our own passing away."

Virchow had great literary powers. His writings are characterized by stringency in thought, sharpness of vision, clearness and precision of form. He was gifted with a remarkable ability to work. In his later years it may have seemed to many that his numerous interests removed him from immediate touch with the results of the more modern investigations. When bacteriology came upon the scene he remained sceptic and reserved, and did not take part in the new researches. He appeared more as a man that felt his creative work to be done and that was content to rest upon his laurels. But it is to be remembered that he always bowed before complete and definite results, though his critical spirit never slept. "Gigantic work like that performed by him during the first twenty years can not continue for ever; one new era created can not be replaced by another by one man." His own experience in regard to investigative work is illustrated in his saying that "the silent unnoticed labor of a scientist requires more energy and greater effort than the activity of the politician, which is both noisier and more speedily appreciated." And in the end the work of Virchow the investigator probably will be regarded as his best and greatest. When everything else is forgotten the world will remember the investigative work of his early manhood.

> We live in deeds, not years; in thoughts, not breaths;
> In feelings, not in figures on a dial.
> We should count time by heart throbs. He most lives
> Who thinks most, feels the noblest, acts the best.

We have received a cablegram from Berlin announcing that a committee of American physicians attended Professor Virchow's funeral, September 9, who presented an exquisite wreath of Easter lilies and maidenhair ferns from their countrymen practicing and studying in Berlin, with an inscription testifying to the high esteem of the medical profession of the United States for the world-renowned pathologist, Rudolf Virchow.

St. George Williamson Teackle, M.D., of Baltimore, died suddenly at his summer home near that city, August 30, from angina pectoris, aged 52. He was graduated from the University of Maryland in 1870, then spent two years at the Blackwell's Island Hospital, N. Y. He settled in Baltimore in 1872, and was physician of the Baltimore General Dispensary from 1872 to 1876, visiting physician to Bayview Asylum from 1879 to 1881 and state vaccine agent of Maryland from 1882 to 1897.

Lucretius D. Ross, M.D. Castleton (Vt.) Medical College, 1857, a prominent member of the Vermont State Medical Society and some-time president of the Rutland County Medical Society, who served during the Civil war as surgeon of the Fourteenth Vermont Volunteer Infantry, died at his home in

Pulteney, Vt., August 25, after an invalidism of nine years due to paralysis, aged 75.

William Faithful Hendrickson, M.D. Johns Hopkins University, Baltimore, 1900, instructor in pathology in the University of Pennsylvania, died at the Union Protestant Infirmary, Baltimore, from meningitis, August 21, after an illness of three months, aged 26. He was taken ill in June with broncho-pneumonia, for which he sought relief in vain in the Adirondack Mountains.

John Henry Longnecker, M.D. Jefferson Medical College, Philadelphia, 1846, a veteran of the Civil war, in which he served as surgeon of the One Hundred and Twenty-ninth Pennsylvania Volunteers and assistant surgeon at the Annapolis Hospital, and a retired practitioner of New York, died at his home in Islip, Long Island, N. Y., August 19, aged 80.

Rufus W. Griswold, M.D. College of Physicians and Surgeons, New York, 1854, a prominent physician of Connecticut, member of the state medical society, and twice president of Hartford County Medical Society, died at his home in Rocky Hill, August 17, from heart disease, after an illness of nearly two months, aged 77.

Francis W. Chadbourne, M.D. Medical School of Maine, Brunswick, 1869, one of the oldest practitioners of Lowell, Mass., a member of the Massachusetts and Middlesex North medical societies and a member of the staff of the Corporation and Lowell General hospitals, died suddenly at his home, August 21, aged 59.

William McD. Struble, M.D. University of Pennsylvania, Philadelphia, 1885, president of the board of health of Trenton, N. J., died at his residence in that city, August 28, from paralysis, aged 42. He had served as president of the Trenton Medical Association and of the Mercer County Medical Society.

George A. Bodamer, M.D. University of Pennsylvania, Philadelphia, 1884, a member of the American Medical Association, for a time chief resident physician of the German Hospital, Philadelphia, but of late years in private practice, died at his home in Philadelphia, August 20, aged 43.

George G. Verbryck, M.D. Long Island College Hospital, Brooklyn, N. Y., 1884, died at his residence in Salt Lake City, from typhoid fever, August 21, after an illness of five weeks, aged 43. The Salt Lake County Medical Society met, August 23, and adopted resolutions of respect and sympathy.

Thomas A. Mason, M.D. Medical College of Indiana, Indianapolis, 1875, died from heart disease at his home in Terre Haute, Ind., August 28, aged 58. The Vigo County Medical Society, at a special meeting held August 28, passed resolutions of condolence and regrets.

James L. Morrow, M.D. Medical College of Ohio, Cincinnati, 1853, a prominent practitioner of Delphi, Ind., who served in the Civil war as assistant surgeon and surgeon of the Seventy-second Indiana Volunteer Infantry, died at his home, August 15, aged 75.

Ralph H. Fetty, M.D. Baltimore University School of Medicine, 1888, formerly assistant superintendent of the State Hospital at Weston, W. Va., and thereafter a practitioner of Camden, died suddenly at Clarksburg, W. Va., August 24, aged 49.

James Pierce, M.D. New York University, 1871, a member of the Lawrence Medical Club and of the Massachusetts Medical Society, died at his home in Methuen, Mass., where he had practiced for more than twenty-five years, August 25, aged 54.

Joseph M. McManigal, M.D. College of Physicians and Surgeons, Baltimore, 1883, for the last four years physician at the Allegheny City Home, died suddenly at his residence in Hoboken, Pa., from heart disease, August 29, aged 39.

Thomas H. Phillips, M.D. Jefferson Medical College, Philadelphia, 1864, a surgeon in the Army during the Civil war, and family physician to the late President McKinley, died suddenly at his home in Canton, Ohio, August 30, aged 67.

John D. Briggs, M.D. Detroit (Mich.) Medical College, 1871, for more than 25 years a practitioner of Williamson, N. Y., and coroner of Wayne County for three years, died at the Rochester City Hospital, August 23, aged 66.

Archibald B. Lang, M.D. New York University, 1884, for 17 years a resident of Sault Ste. Marie, Mich., and in 1893 mayor of that city, died at his home, August 24. He was a member of the American Medical Association.

W. W. Gaither, M.D. Jefferson Medical College, Philadelphia, 1860, surgeon of the Twenty-sixth North Carolina Infantry, C. S. A., died at his home in Shallotte, Brunswick County, N. C., August 18, aged about 70.

Matthias S. Wheeler, M.D. Rush Medical College, Chicago, 1868, one of the oldest physicians of Sangamon County, Ill., died at his home in Auburn, August 27, from cancer of the stomach, after a long illness, aged 63.

Robert O. Andrews, M.D. Bellevue Hospital Medical College, New York, 1886, a prominent practitioner of East Liverpool, Ohio, and a member of the American Medical Association, died at his home, August 25, aged 65.

George B. Nichols, M.D. Rush Medical College, Chicago, 1883, a prominent member of the Vermont State Medical Society, died at his home in Barre, from Bright's disease, August 25, aged 63.

Adam O. Miller, M.D. Marion-Sims College of Medicine, St. Louis, 1891, after a prolonged debauch, shot and killed his wife and then committed suicide by taking tincture of opium August 31, aged 35.

George D. Perkins, M.D. University of Michigan, Ann Arbor, 1897, a member of the laboratory staff of Parke, Davis & Co., Detroit, died at his home in that city, September 2, from kidney disease.

Richard Oliver, M.R.C.S. Eng., and L.S.A., 1861, for nearly fifteen years resident physician at the leper settlement at Molokai, Hawaii, died at his residence in Waikiki, August 12, aged 63.

Francis E. Rosenkrans, M.D. Cincinnati College of Medicine and Surgery, 1875, died at his home in Grand Rapids, Mich., August 22, from cancer, after an illness of two months, aged 61.

J. A. Mignault, M.D. Harvard University Medical School, Boston, 1844, for many years coroner of the district of Terrebonne, Quebec, died at his home in St. Benoit recently, aged 83.

Albert E. Evans, M.D. Medical College of Ohio, Cincinnati, 1883, formerly of Chicago, died at the Dayton State Hospital, from paresis, August 28, after a long illness, aged 43.

Carl Patterson, M.D. Beaumont Hospital Medical College, 1898, a young practitioner of Denison, Texas, was drowned while swimming in Red River, August 24, aged 26.

Marion Wilkerson, M.D. Medical College of Ohio, Cincinnati, 1853, for many years a practitioner of Sabina, Ohio, died at the Soldier's Home, Dayton, August 19, aged 83.

Darwin Potter, M.D. Geneva (N. Y.) Medical College, 1860, a prominent physician of Rochester, N. Y., died suddenly at Lily Dale, N. Y., from apoplexy, August 17.

John R. Little, M.D. University of South Carolina, Columbia, 1859, died at his home in Spartanburg, S. C., August 18, after a protracted illness, aged 70.

William B. Swan, M.D., secretary of the Kansas State Board of Health, Topeka, was drowned while boating near Ludington, Mich., September 1.

Mortimer V. Wilkie, M.D. Columbia University, New York, died at his home in Cuddebackville, N. Y., August 31, after a short illness, aged 45.

P. Germain Laberge, M.D. Laval University, Quebec, 1891, died at his home in Manchester, N. H., from heart disease, August 23, aged 38.

Edwin Pratt, M.D., a retired physician of Bellefontaine, Ohio, died at his home in that city from chronic lung disease, August 25, aged 75.

B. J. Sapp, M.D., a retired practitioner of Kernersville, N. C., died at his home in that place after a long illness, August 28, aged 66.

Roy H. Hawkes, M.D. College of Physicians and Surgeons, New York, 1893, died recently from pneumonia at his home in New York City.

William D. Barber, M.D. Kansas City Medical College, 1887, a practitioner of Chicago, died at East Las Vegas, N. M., August 23.

John Simison, M.D. Cincinnati Medical College, 1850, died at his home in Romney, Ind., August 19, from typhoid fever, aged 78.

James M. Sellers, M.D. Tulane University, New Orleans, 1875, died at his home in Edna, Texas, August 24, after a long illness.

Thomas Hickey, M.D. Jefferson Medical College, Philadelphia, 1894, died at Shamokin, Pa., August 6, from tuberculosis.

H. M. Talley, M.D. Vanderbilt University, Nashville, Tenn., 1857, died at Valdosta, Ga., September 1, from apoplexy.

Ebenezer H. Thurston, M.D. University of Buffalo, 1865, died at his home in Chicago, August 25, aged 64.

J. Warren Howard, M.D., died at his home in St. Paul, Ind., August 29, from heart disease, aged 63.

Thomas C. Osborn, M.D., died at his home in Cleburne, Texas, August 20, aged 85.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

COINCIDENCE—ITS PROPER VALUE IN DIAGNOSIS.

ST. LOUIS, Aug. 25, 1902.

To the Editor:—I think it would serve a useful purpose if you invited contributions to your columns concerning coincidences, and to express more clearly what I mean I will cite two cases from my own practice:

A man came to me complaining of pain in the right testis of two days' duration which he attributed to the testes having been suddenly squeezed between the left thigh and a bunch of keys in his right trouser pocket in the act of crossing his legs. No pain had ever been experienced in the part before. Examination disclosed advanced tubercular epididymitis.

A boy was brought to me supposed to be suffering from nervous shock, having been knocked over some days previously by a drunken man in the street. Routine examination commencing with the throat discovered diphtheria.

Here is a factor, then, which, as far as I know, has never been touched on in the treatises on diagnosis—coincidence. There is no escape from being obliged to give it due consideration in our mental summing-up of the case unless we examine our patients from a veterinary point of view—perhaps a better way—finding out what we can by our own unaided industry. The consideration of the particular value to be attached to coincidence would lead me further than it is my intention to trespass on your valuable space. Recitation of cases from others would not only be highly instructive but also most interesting and would furnish a moral to adorn many a clinical tale. Yours faithfully,

J. R. CLEMENS.

ETHICS IN SUCCEEDING ANOTHER PHYSICIAN.

LAWRENCE, MASS, Aug. 28, 1902.

To the Editor:—Kindly decide this question of ethics, and oblige two members of the profession in good standing and others who may meet with a parallel case: A physician has been in attendance on a patient ten days (after miscarriage) and has made morning visit and is to call during afternoon. Meanwhile the family desires to dispense with his services—he has been paid in full for services rendered—they telephone for another physician who has no knowledge of the circumstances until he arrives at the bedside. When he is informed that a fellow practitioner is expected to call he refuses to accept the case or give an opinion and rises to depart. The patient and her husband state that they desire his services and shall not further employ the other physician. He explains his position and ends by refusing to have anything to do with the case unless in consultation with the other physician. The family refuse to have the other physician. "Then, you must notify your attending physician not to call any more," said the second physician, "before I shall be at liberty to attend this patient." The husband goes to the physician's office and leaves notice that his services are no longer required. The husband returns and states that he was unable to see the physician personally but left word at his office for him not to call. Meanwhile, the patient suffers considerable pain. The second then accepts the case, makes examination, gives opinion and outlines treatment. He in no way solicits patronage, and neither criticised nor commented on the previous conduct of the case. Has he (the second physician) broken a rule of ethics or been guilty of conduct in any way discourteous to his fellow practitioner? Very truly yours.

JOHN T. CAHILL.

ANS.—As stated there seems to be no violation whatever of the Code of Ethics. See Art. V, Sec. 4.

MALARIA WITH ANASARCA.

MOSHER, ARK., Aug. 27, 1902.

To the Editor:—Since locating in Arkansas I have encountered a peculiar condition that the text-books fail to describe. It is an anasarca associated with or dependent on acute malarial infection. It commences with a chill and is followed by fever and sweating. About the second or third day the swelling begins and involves the whole body. The fever is now slight or wanting. The thoracic and abdominal viscera are apparently normal except a slightly enlarged spleen. Urine analysis: sp. gr. 1020, acid, amber, no sugar, no albumin, no casts. Pot. ferio cyanid. heat and nitric acid tests for albumin were carefully used. Blood examination revealed many plasmodia malaria—crescents in all cases. After giving quinin for a week or nine days a speedy convalescence ensued. The patients ranged in age from four to fifty-two years and none had had malaria for years. I would be gratified for any information as to where I can find literature on the disease or of anyone with like experience. F. L. MORSE, M.D.

WOUNDS OF THE ABDOMEN.

ALBERT, W. VA., Sept. 4, 1902.

To the Editor:—Kindly answer the following questions through THE JOURNAL: 1. Given a patient with one or several stab wounds in the abdomen, what, in your opinion, is the very shortest time in which death could result from peritonitis? 2. What is the latest treatment advised for gunshot wounds of the abdomen—wounds inflicted with the ordinary weapons? A. P. BUTT.

ANS.—1. Shock and hemorrhage can not be excluded, but when they are not dominant factors, peritonitis may result in death in 24 to 30 hours. 2. For the expert: if there is presumptive evidence of involvement of abdominal viscera, immediate operation, repair of damage and washing out of the abdominal cavity. For the ordinary practitioner: if there is strong evidence of visceral involvement, immediate operation is indicated; if not, expectant treatment.

Correspondence.

Concerning Indexes of Medical Journals.

DILLON, MONT., Sept. 4, 1902.

To the Editor:—Regarding the editorial note "Concerning Indexes of Medical Journals" in THE JOURNAL of August 30: The index furnished by THE JOURNAL is indeed a valuable addition to our comfort, but even such an index can not attain perfection, from its necessarily discontinuous publication.

I would suggest my plan of using card index. It is this: Soon after receipt and reading of each periodical, its contents are indexed on cards and a check mark placed on the journal to show that it is ready to be filed away until the volume is complete. Each periodical is given a number, which accompanies the volume numbers, for example: THE JOURNAL A. M. A. is No. 1. Then an article appearing in vol 39, page 496, on "Indexes of Medical Journals" is placed on the card devoted to "Indexing" as "1, 39-496, medical journals," meaning: THE JOURNAL A. M. A., vol. 39, page 496, indexing of medical journals.

I subscribe to only six journals, but in six years this amounts to 72 volumes and everything considered worth preserving is indexed at one place (in two drawers of my office desk). Thus, in a very few moments I am able to find every article on a given subject in any of the 72 volumes, and without rising from my desk. The work of indexing amounts to only a few minutes each week and the short time spent on it I consider most profitably employed. M. A. WALKER, M.D.

Priority in Perineum Repair Technic.

ATLANTA, GA., Aug. 19, 1902.

To the Editor:—In THE JOURNAL of the 16th inst. is a communication from Dr. Marcy of Boston in which he calls attention to these articles of his, viz.: Transactions of the American Association of Obstetricians and Gynecologists, September 1888, "The Perineum; Its Anatomy, Physiology and Methods of Restoration After Injury"; also "The Reconstruction of the Pelvic Structures in Woman," American Association of Obstetricians and Gynecologists, 1892; also "The Reconstruction of the Pelvic Structures Incident to Lesions of Perineum," THE JOURNAL American Medical Association, October 21, 1899. He then says: "Here will be found all the essentials of Dr. Noble's interesting article on 'A New Operation for Complete Laceration of the Perineum.'"

In reply to this most extraordinary claim I will state that the chief feature of my operation is *elimination of the danger of infection from the rectum* by dissecting the lower anterior portion of the rectum free from the vagina and drawing the uninjured portion of the anterior wall of the rectum down through and external to the anus, making an unbroken septum between the rectum and vagina, virtually converting the complete tear into an incomplete laceration. Dr. Marcy does not attempt to do this; his operation is the Tait operation modified

by a Marcy stitch and safety pins. He distinctly describes suturing of the rectal tear and folding of the rectal mucosa closely together, thus showing that his operation in nowise approaches mine. In my operation for incomplete tears I show that approximation of the fascia layer to layer is the feature aimed at. Nowhere in his articles does he show that he attempts this, but enlarges on buried animal sutures. The absolute want of similarity between his and my operations makes his claims most extraordinary and unwarrantable.

I, as most surgeons of this day, make no claim of buried sutures, and as they have been in use so many years in this country and in Europe, it is unnecessary to mention the name of the man who first used them. Should Dr. Marcy lay claim to everything that buried animal sutures are used in he will have a self-invested interest in a large part of the world's surgery. The buried suture is the only thing common to his and my operation for incomplete tears, and in my new operation for complete laceration it does better.

If Dr. Marcy will carefully read my paper he will see his mistake. Respectfully, GEO. H. NOBLE.

Accomplishments of the Finsen Apparatus in Lupus.

BROOKLYN, Aug. 25, 1902.

Prof. N. R. Finsen has kindly given me photographs of one of his most interesting cases, showing the condition of the

Figure 1.

patient before (Fig. 1) and after (Fig. 2) his use of the chemical rays of light, with the tube devised by him. Fig. 3 shows a Finsen tube in position, with a patient under treatment for lupus of the nose. This is a tube which I purchased when in Copenhagen, and which I am now using with a very satisfactory degree of success.

The method is being used successfully in Russia, Greece and Great Britain under the patronage of the governments of these countries, also by many private physicians all over Europe. In this country there are as yet very few men working in this department. I suppose there would be more if it were not for the expense of installation and maintenance. Fig. 4 shows the new lamp devised by Dr. Bang, one of Prof. Finsen's assistants. The beauty of this is that it does not require any carbons. This is the first of this make of lamp that has reached this country, and it is certainly very ingenious in its construction. It will do excellent work but covers a smaller space than the light from the arc lamp. The amount of current consumed is so small in comparison with

Figure 2.

Figure 3.

the older lamp as to make it a question whether in time it may not replace the older Finsen apparatus.

I trust these photographs may prove interesting, and induce more of the profession to undertake the trial of this interesting

Figure 4.

method of treatment of a class of diseases heretofore considered incurable.

GEORGE G. HOPKINS, A.M., M.D.
350 Washington Avenue.

New Instruments.

COMBINATION SURGICAL INSTRUMENT.

HENRY EMERSON WETHERILL, M.D.
Surgeon Naval Reserve, Pennsylvania.
PHILADELPHIA.

THE OBJECTS OF THE INSTRUMENT.

The purpose of this instrument is to combine such surgical instruments together that are ordinarily used by the physician, nurse, medical student and others that may from time to time need a few surgical tools. So far as possible the great danger of a combination instrument, that is to say one instrument interfering with the effectiveness of another, has been overcome. The instrument is not intended to supplant ordinary instruments as in the surgeon's pocket case, but it is intended to be used where one instrument at a time is desired. It is meant particularly for emergencies, as it is an instrument that one is likely to have with him at all times and in this respect not like the pocket case which sooner or later is apt to be at home when the emergency occurs.

By the use of a small and a large form of this field instrument one is able to do most any little operation. After several years' experience with it, in the army, in practice, on expeditions, here and there, it has proved itself useful, for there are many times when you can use at least one part of the instrument. It is true that it would be about as difficult to pick up something and cut it off by the use of forceps and scissors, as for a dog to catch his own tail. But by borrowing another man's instrument, as might be done by a hospital corps man in the army, one could readily overcome this difficulty, providing he had but one instrument, and he would hardly need more than two for minor surgery.

The instrument consisting of but two pieces is not likely to become lost. The parts lock together and can be carried in the pocket or in a chamois case on the belt.

The special use for this instrument seems to be where you can not carry a full case of instruments and where it will do any small thing that may be required of it at that time.

THE USES OF THE INSTRUMENT.

Although the ingenuity of the operator will suggest many little uses to which he can from time to time put this instrument, the following are mentioned as some of the more important ones. As scissors it will give a straight or curved cut, and will work as a bandage scissors, and as scissors curved on the flat or vertical. The grooved director ends near the eyed probe end, which in a way may be used as a dry dissector. The knife blade has a curved belly and can be used as a bistoury as well as a scalpel; and when the instrument is wet with blood the loop of the scissors blade fits the third finger of the right hand and gives one a good grasp on the instrument. The knife in this position is held securely and is well balanced and in a good position for cutting. This blade alone held in this manner would enable a man to somewhat protect himself on the field. When the instrument is partly closed, the belly of the scalpel projects somewhat like the sharp edge of a hernia knife. The sharp point and edge are completely protected when the instrument is closed, and when open and the hemostat end of the instrument is being used, are out of the way of the wrist.

There is a long clamp between the handles of the scissors. The hemostat is handy to pick up cut dressings—cut with the scissors. This is readily done with one hand and the other hand does not have to be used to hold a pair of spring forceps. The loops of the instrument stay on the fingers when the hemostat portion is used as a dressing forceps. Needles of various kinds may be held by the hemostat, and in the concavity of the instrument a shot will rest when the needle hole running across the hemostat is used as a shot threader. A funnel-shaped opening facilitates the centering of the silkworm gut or other material. The needle, however, does not wabble on account of this enlargement. Between the two rat teeth on the upper blade a needle can be held firmly as would be desirable in teasing out fibers under the microscope.

A sharp and dull curette, one side sharp, the other blunt;

rests on the top of the hemostat so as not to interfere with a ligature. On the under side is a file arrangement, useful in vaccination. It can readily be cleaned. There are practically no hollow corners, so the instrument may readily be sterilized.

There were some difficulties in producing this instrument, such as the making of a satisfactory lock, and a pair of hemostats that would work nicely. In offering this instrument for trial by the profession I do so not stating that it will do every-

thing, but that I have found it useful to have with me, as it will do many of the little things one has to do every day.

3734 Walnut St.

A THIMBLE PLEXIMETER.

W. C. LANGHORST, M.D.
CHICAGO.

I have devised a pleximeter that will overcome the difficulties and complexities of the present method of percussion by making it possible not to require more than the end of the finger to be used as the hammer proper, the balance of the finger acting with the hand and wrist. In order to do this the end of the finger must be properly weighted. The amount of weight should vary with one's proficiency in the use of the present method, the less experienced the greater the weight and vice versa. The pleximeter is preferably made of metal, thimble-shaped, with a gum tip which must be of an exact size for each pleximeter; the size and thickness of this tip should vary with the weight principally.

The gum tip serves two important purposes—it protects the finger struck, and it causes the finger to which it is attached to rebound more quickly, therefore a more resonant and clear

tone results. With a little practice the advantage over the unaided finger method or other methods where the force or rather resistance of the blow is not directly transmitted to the percussion finger, is readily brought out. The blow properly struck can be executed more quickly either lightly or heavily, and the tones elicited are correspondingly sharp and clear, loudness depending on the force of the blow. This method does not lessen the sense of resistance felt by the percussing finger; if there is any difference the force is intensified by the gum tip.

12 Selden Street.

Book Notices.

THE OPERATIONS OF SURGERY. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S., Surgeon to Guy's Hospital; and F. J. Stewart, M.S. London, F.R.C.S., Assistant Surgeon Guy's Hospital, and to the Hospital for Sick Children. Fourth Edition, Revised, Enlarged and Improved. 550 Illustrations. Two Volumes: Volume I—Operations on the Upper Extremity; Operations on the Head and Neck; Operations on the Thorax. Volume II—Operations on the Abdomen; Operations on the Lower Extremity; Operations on the Vertebral Column. Cloth. Pp. 402. Price, $10.00. Philadelphia: P. Blakiston's Son & Co. 1902.

It is but a short time since the third edition of this work was reviewed, and it is now with pleasure that we announce the fourth edition. One may judge of the growth which the work has undergone since its first edition by the fact that the first edition contained only 199 illustrations, while in the fourth edition are 550.

The authors state that the work was never intended "for those of large surgical experience," but for those recently appointed on a hospital staff and for those preparing for the higher examinations. Notwithstanding the authors' modest intentions, the work is certainly one of the best that has appeared on the subject of operative surgery. It contains not only an excellent description of the technic of the various operative procedures, but an immense amount of information concerning diagnosis, indications for operation, after-treatment and results, with illustrative cases and references to the literature.

The illustrations are good and the work can be recommended to the surgeon of large experience as well as to the younger man.

A TREATISE ON DISEASES OF THE SKIN. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology, Jefferson Medical College and Woman's Medical College, Philadelphia. Handsome Octavo of 1125 Pages, with 220 Text-Illustrations, and 26 Full-page Lithographic and Half-tone Plates. Cloth. Price, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

Dr. Stelwagon has here produced a very handsome and valuable treatise on the general subject of skin diseases, and one that fulfills his desire to give a practical knowledge of the symptomatology, diagnosis and treatment of the affections that are likely to be met by the general practitioner. In looking over the book we find very little of importance that is omitted and a great deal that is here given in a form perhaps not better, but certainly fully as well, as in any work of its kind. The illustrations are very numerous and helpful and the descriptions are clear. The style is readable and the work seems one that to us ought to be most favorably received by the general practitioner and referred to by the dermatologic specialist. The subject in the esthetic point of view is not an attractive one, but from a medical point of view it is one that certainly has its interest to every practitioner. Skin diseases are external and open to view and yet there are probably as much diagnostic error in practice in regard to these as there is in regard to many more recondite conditions. There is, therefore, still room for works like this by eminent specialists for the general professional edification.

A MANUAL OF SURGICAL TREATMENT. By W. Watson Cheyne, M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London, Surgeon to King's College Hospital, etc., and F. F. Burghard, M.D. and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, London, Surgeon to King's College Hospital, etc. In Seven Imperial Octavo Volumes, with Illustrations. Volume VI, 498 Pages with 124 Illustrations. Cloth, $5.00 net. Philadelphia and New York: Lea Brothers & Co. 1902.

It was the intention of the authors to complete this work (the previous volumes of which have already been noticed in these columns) in six volumes, but they found the sixth volume would be so large, that it seemed more desirable to them to make two volumes corresponding in size to those already issued, rather than one very large one.

Section 1, of Vol. VI treats of the affections of the tongue, floor of the mouth, pharynx, neck, esophagus, stomach and intestines. Under strictures of the esophagus we find no mention of Abbe and Dunham's excellent method of treating small strictures by means of the silk thread, a most important advance in the treatment of these very troublesome cases.

Under gastroenterostomy the advisability of attaching the loop of intestine as low down or near the great curvature as possible is not made sufficiently apparent.

The subject of appendicitis is well handled, and the volume closes with a consideration of hernia.

The same excellent standard of the previous volumes is maintained.

PRINCIPLES OF SANITARY SCIENCE AND THE PUBLIC HEALTH, with Special Reference to the Causation and Prevention of Infectious Diseases. By William T. Sedgwick, Ph.D., Professor of Biology and Lecturer on Sanitary Science and the Public Health in the Massachusetts Institute of Technology, Boston. Cloth. Pp. 368. Price, $3.00. New York: The Macmillan Co. 1902.

The present volume is, the author says, the direct outgrowth of a course of lectures on sanitary science and public health given for several years by the author, professor of biology and lecturer on sanitary science at the Massachusetts Institute of Technology, to the senior students and was prepared primarily for their use. He thinks, however, that it may have a wider utility and the material herein contained may be of value to physicians, publicists and anyone who has to do with matters of public and private sanitation. It is unnecessary to say that the chapters are representative of the best knowledge of the subject. Perhaps a little more detail might have been given to one or two matters, such as the more modern methods of sewage disposal, some of which are hardly more than alluded to. On the whole, however, it gives a vast amount of well-handled information that ought to have a wide circulation among the classes above designated. Its usefulness where the matter contained is properly studied and digested can not be denied.

THE STUDY OF THE PULSE, Arterial, Venous and Hepatic and of the Movements of the Heart. By James MacKenzie, M.D. (Edin.), Burnley. Cloth. Pp. 325. Price, $4.50. New York: The Macmillan Co. 1902.

The object of this work is to give a more or less graphic statement of certain facts of the circulation as revealed by the pulse and especially to explain certain of the symptoms of the

heart's action which have not been thoroughly described heretofore or erroneously interpreted. The author has attempted to reduce to order and system a vast amount of information, and while he does not claim to have been entirely successful in his attempt, the work is without doubt a contribution to our knowledge and will clear up certain facts that are more or less puzzling. Dr. Mackenzie believes in the sphygmograph and the large number of tracings which he gives throughout the book show how much he has depended on it. He says correctly if we would use graphic records to verify observations of teachings we would gain in accuracy. The book is not one that is exactly easy reading except to those who are more or less acquainted with the physical signs of the heart, but to the cardiac or thoracic specialist it ought to be of real value as a work of reference and study.

A MANUAL OF PRACTICAL ANATOMY. By the Late Professor Alfred W. Hughes, M.B., M.C., Edin., F.R.C.S. Edin., F.R.C.S. Eng. Professor of Anatomy, King's College. Edited and Completed by Arthur Keight, M.D. Aberd., F.R.C.S. Eng., Lecturer on Anatomy London Hospital Medical College. In Three Parts. Part II. The Abdomen and Thorax. Illustrated by 4 Colored Plates and 151 Figures in the Text. Cloth. Pp. 308. Price, $300. Philadelphia: P. Blakiston's Son & Co. 1902.

The second part of this manual deals with the anatomy of the abdomen and thorax. It contains four colored plates and one hundred and fifty-one figures in the text. Most of the latter are copied from other text-books on anatomy. Throughout the book very little reference is made to fetal remains. On page 83 the appendix is said to have an average length of from four to seven inches. This is much too long, at least according to the experience of American surgeons and anatomists. The supports of the kidneys are well elucidated, and Figs. 178 and 179 show very clearly the anatomic relations and the supports themselves. Hardly enough emphasis is placed on the relation of the axis of the uterus to that of the vagina. In the thorax the importance of landmarks are pointed out, but are not well illustrated. Part II throughout is rather condensed considering the importance of the parts of the body under consideration.

THE THEORY AND PRACTICE OF INFANT FEEDING, with Notes on Development. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children at the New York Post-Graduate Medical School and Hospital. With Numerous Illustrations. Cloth. Pp. 325. Price, $2.25. New York: Wm. Wood & Co. 1902.

Dr. Chapin's contributions to this subject in periodical medical literature are well known and this volume from his pen deserves a cordial reception. The subject is one that is so much to the front at the present time that there is little reason for denying that a work of this kind meets a want. The subject is very thoroughly and clearly treated, the book is well arranged and made up and is throughout a convenient manual on the subject. The methods of preserving, examining, Pasteurizing, and sterilizing milk are given, as well as the methods for its modification for artificial infant feeding. The different special conditions which must be met in the diet, changes for different years, etc., are all considered and in the concluding section of the work the rules for calculating the growth of infants and their measurements are given in such a way as to be readily intelligible. The book is a convenient manual for reference that every practitioner should have.

MASSAGE AND THE ORIGINAL SWEDISH MOVEMENTS. Their Application to Various Diseases of the Body. Lectures Before the Training Schools for Nurses Connected with the Hospital of the University of Pennsylvania, German Hospital, Woman's Hospital, Philadelphia Lying-in Charity Hospital, the Philadelphia Polyclinic and College for Graduates in Medicine, and the Kensington Hospital for Women, of Philadelphia. By Kurre W. Ostrom, from the Royal University of Upsala, Sweden. Fifth Edition, Revised and Enlarged, with 115 Illustrations. Cloth. Pp. 181. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1902.

This is the fifth edition, the first having appeared within about twelve years. It contains considerable new material over the fourth edition and many original practical points scattered throughout the text. It is a convenient concise manual of massage and as such should find favor with the profession.

CLINICAL LECTURES ON NEURASTHENIA. By Thomas D. Savill, M.D., Physician to the West-End Hospital for Diseases of the Nervous System, London. Second Edition. Cloth. Pp. 171. Price, $1.50 net. New York: Wm. Wood & Co. 1902.

The first edition of this work has been already noticed in THE JOURNAL and the favorable opinion there expressed in regard to it need not be repeated. The present edition has been to some extent revised and new illustrative cases added, certain parts omitted and others changed to meet the wider experience of the author and the developments of our knowledge.

Association News.

New Members.

The following is a list of new members for the month of August:

ALABAMA.
Sadler, J. M., Montgomery.

ARIZONA.
Seton, W. H., Phœnix.

CALIFORNIA.
Beckett, W. W., Los Angeles.

COLORADO.
Walbrach, C. E., Denver.
Keyser, P. H., Boulder.
Pershing, H. T., Denver.

CONNECTICUT.
Hungerford, H. E., Waterbury.
Freney, J. D., Waterbury.
Pierson, Sam'l, Stamford.

ILLINOIS.
Williams, A. L., Vandalia.
Pickels, W. H., Coal City.
Stericker, G. F., Springfield.
Culbertson, Carey, Piper City.
Wyatt, J. T., Eureka.
Churchill, A. H., Oswego.

INDIANA.
Leslie, G. M., Ft. Wayne.
Huff, O. N., Fountain City.

INDIAN TERRITORY.
Graves, W. C., Hartshorne.

IOWA.
Torney, S. J., Staceyville.
Lowry, J. D., Ft. Dodge.

KANSAS.
Johnston, G. F., Lakin.

KENTUCKY.
Mansfield, C. D., Stanton.

LOUISIANA.
Maes, Urban, New Orleans.
Adams, I. N., Olla.
Brady, C. M., New Orleans.
Dupaquier, E. M., New Orleans.
Fenner, E. D., New Orleans.
Lazard, Jules, New Orleans.
Terrett, B. A., Natchitoches.
Callan, John, New Orleans.

MASSACHUSETTS.
Nichols, E. H., Boston.
Dwight, H. L., New Bedford.
Faulkner, W. E., Boston.

MICHIGAN.
Evans, Newton, Battle Creek.
Benjamin, A., Saginaw.
Wetherbee, C., Jones.
Martindale, E. Arthur, Jackson.
Wall, W. Jocelyn, Cash.

MINNESOTA.
Linjer, O. E., Minneapolis.
Petersen, J. R., Willmar.

NEBRASKA.
Ralph, J. B., Omaha.
Bixby, Jos., Geneva.
Lemere, H. B., Omaha.
Nielsen, Morris, Belden.

NEW HAMPSHIRE.
Morgan, G. P., Dover.

NEW JERSEY.
Richards, J. W., Ft. Mott, Salem.

NEW YORK.
Bailey, Theodorus, New York City.
Kirkendall, J. S., Ithaca.
Robertson, Frank W., Elmira.
Dunham, S. A., Buffalo.

OHIO.
Tucker, E. D., Toledo.
Carter, E. P., Cleveland.

OREGON.
Johnson, A. H., Portland.
Beers, H. E., Waco.

OKLAHOMA.
Robinson, O. T., Hydro.
McComas, J. M., Elk City.

PENNSYLVANIA.
Allen, A. R., Carlisle.
Denney, Wm., Washington.
Zerner, H. E., New Castle.

SOUTH DAKOTA.
Killen, V. R., Nemo.
Waldron, P. J., Rapid City.

TEXAS.
Dyer, U. E. G., Star.
Moore, T. E., San Antonio.

VIRGINIA.
Moran, M. M., Pinners.

WASHINGTON.
Bartley, J. H., Cle Elum.

WISCONSIN.
Meyer, Edw., Brillion.
Ehlert, E. H., Hartford.

Societies.

COMING MEETINGS.

Medical Society of the State of Pennsylvania, Allentown, Sept. 16-18, 1902.
American Association of Obstetricians and Gynecologists, Washington, D. C., Sept. 16-18, 1902.
Medical Society of the Missouri Valley, Sioux City, Iowa, Sept. 18, 1902.
American Dermatological Association, Boston, Sept. 18-20, 1902.
American Academy of Railway Surgeons, Kansas City, Mo., Oct. 2-3, 1902.
Medical Association of District of Columbia, Washington, Oct. 7, 1902.
Idaho State Medical Society, Moscow, Oct. 9-10, 1902.
Vermont State Medical Society, Burlington, Oct. 9-10, 1902.
Mississippi Valley Medical Association, Kansas City, Mo., Oct. 15, 1902.

Medical Society of the State of Pennsylvania.—This society will hold its annual meeting at Allentown, September 16, 17 and 18.

Medical Society of Virginia.—This society will hold its annual meeting at Newport News, September 23, 24 and 25, under the presidency of Dr. Richard S. Martin, Stuart.

McLean County (Ill.) Medical Society.—This society has issued a very neat program for the year 1902-1903, containing a roster of its members, officers and committees, and the topics to be discussed at each meeting throughout the year.

American Academy of Railway Surgeons.—The annual session of this body will be held at the Midland Hotel, Kansas City, Mo., October 2 and 3, under the presidency of Dr. August F. Jonas, Omaha, Neb. Dr. John W. Perkins, Kansas City, is chairman of the committee of arrangements.

Reading (Pa.) Medical Association.—At the annual meeting of this association, August 25, Dr. Clarence M. Kurtz was elected president; Dr. Irvin H. Hartman, vice-president; Dr. Louis L. Thompson, secretary; Dr. Oan J. Thompson, treasurer, and Dr. S. Banks Taylor, curator.

Jessamine (Ky.) Medical Society.—The physicians of Jessamine County met at Nicholasville recently and organized this Society, with Dr. Charles Mann, Nicholasville, president; Dr. Hugh L. McLean, Wilmore, vice-president, and Dr. J. Atwood Van Arsdall, Nicholasville, secretary and treasurer.

Medical Protective League.—This league, which was organized in July, 1901, for the twofold purpose of advancing medical science, and of advancing the material interests of its members by protecting them from the "can-pay-but-won't" patients, met at Bradfordsville, Ky., September 2, and elected Dr. J. B. Evans, Riley, Ky., president, and Dr. George G. Thornton, Gravel Switch, Ky., secretary and treasurer.

Houghton County (Mich.) Medical Society.—The physicians of Houghton County met at Calumet, August 26, for organization. Dr. Albert I. Lawbaugh, Calumet, was made temporary chairman and Dr. James Hosking, Kearsarge, temporary secretary. The physicians of Keweenaw, Baraga and Ontonagon counties have been asked to join the society. The following officers were elected: President, Dr. Albert I. Lawbaugh, Calumet; vice-president, Dr. Joseph E. Scallon, Hancock; secretary, Dr. William K. West, Calumet, and treasurer, Dr. Edward T. Abrams, Dollar Bay.

Gallia County (Ohio) Medical Society.—The regular monthly meeting of this society was held in Gallipolis, September 2. Dr. Charles G. Parker, president, read his inaugural address, in which he urged that harmony and organization should be the watchwords of the society. Dr. Theodore L. Chadburne, resident pathologist of the Ohio Hospital for Epileptics, presented a specimen from a case of diaphragmatic hernia in which the patient, an epileptic, died unexpectedly after a few hours' suffering, from abdominal pain and distension following the ingestion of a large amount of unripe fruit. The stomach, transverse and portion of the ascending colon, all greatly distended, were found in the left thoracic cavity, protruding through a hernial ring in the diaphragm. Death was ascribed to the pressure of the distended intestinal viscera on the heart and lungs.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Tincture of Myrrh in Diphtheria.

Dr. Stroll, writing in the *Allgemeine Med. Centrl. Zeitung*, according to the *Indian Med. Record*, recommends very strongly the tincture of myrrh in diphtheria. The mixture he uses is composed as follows:

R.	Tinct. myrrhæ	℥i	4
	Glycerini	℥ii	8
	Aquæ destil. q. s. ad.	℥vi	180

M. Sig.: To be given every half hour or every hour during the day in teaspoonful doses.

The author states that infants under two years of age may take one teaspoonful at a dose and older children double that quantity. After all the membrane has disappeared the treatment should be continued for two or three days, the interval between the doses being increased to three hours. Usually the fever and lassitude disappear in twenty-four hours, so that a child may frequently be found within that time sitting up in bed playing. He states that there does not seem to be any need for local treatment; but in the case of older children and adults, a gargle containing 0.5 per cent. of resorcin may be employed every hour or oftener in the daytime, or where it is desired the tincture of myrrh, undiluted, may be painted over the tonsil every hour. When the larynx is involved the author uses the foregoing mixture in an inhaler or spray, to be used every half hour. The efficacy of myrrh is supposed to be in its ability to increase the phagocytic elements in the tonsils.

Caustic Treatment of Lupus.

According to an abstract in *Amer. Med.* the treatment of lupus by caustics is inferior to Finsen's method, cauterization, scarification, or the radical cure, but it may be employed when other methods can not be used. The following is Unna's formula in such cases:

R.	Acidi salicylici		
	Sol. antimon. chloridi, ää	℥ss	2
	Creosoti		
	Ext. cannabis ind., ää	℥i	4
	Lanolini	℥ii	8

M. Ft. unguentum. Sig.: After cocainizing the areas involved, apply the plaster with a spatula and cover with a zinc oxid plaster, allowing it to remain for forty-eight hours and then renew.

If the lupus is hard and unyielding, the tissues surrounding the nodules may be softened by means of alkaline caustics such as the following:

R.	Pot. hydratis		
	Calcii (slaked)		
	Saponis nigri		
	Aq. destil., ää	℥i	30

M. Sig.: Apply locally.

The foregoing treatment is applicable only to lupus which is superficial.

Chronic Diarrhea.

Dr. M. Soupault in a recent communication to Societe de Ther., according to the *N. Y. Med. Jour.*, related the good effects of hydrochloric acid in idiopathic forms of diarrhea, where there is no important anatomic alteration in the intestine. The acid, according to the author, must be prescribed in full doses; small doses are useless. One or two grams should be given daily. The pure official hydrochloric acid containing 38 per cent. of the anhydrous acid is used. It may be ordered in the form of drops at the beginning of meals—ten, fifteen or twenty drops—in a glass of sweetened water or mixed with a little citron juice or the following lemonade may be used:

R.	Acidi hydrochloric puri	℥iss-℥ii	6-8
	Syrupi limonis	℥vi	180
	Aquæ	℥xxv	750

M. Sig.: Two to six tablespoonfuls at a dose.

Intratracheal Treatment of Tuberculosis.

Campbell, in *British Med. Jour.*, gives the following technic of intratracheal treatment of tuberculosis:

R.	Thymol	℥i	4
	Salol	℥ii	8
	Menthol	℥i	4
	Glycerini	℥v	150

M. Sig.: To be injected into the trachea with an intratracheal syringe; or:

R.	Medicinal izal	℥iii	12
	Menthol	℥ii	8
	Glycerini	℥v	150

M. Sig.: To be used as an intratracheal injection.

The author injects from two drams to one and a half ounces into the trachea twice a day at a temperature of 140 degrees F. In some cases he employs the first formula for one week and then changes to the second formula. In some cases a weaker emulsion of izal should be used to begin with. The author states, with this treatment, that no irritation or coughing occurs. The duration of the treatment should depend on the individual case.

[Izal, according to Coblentz, consists of an emulsion containing about 30 per cent. of a new oil produced by a process em-

ployed in the manufacture of a special form of coke. It is claimed that its antiseptic power is greater than that of carbolic acid, while it is practically non-toxic.]

Baths in Diseases of the Skin.

In acute eczema, urticaria or psoriasis in children, the following formula is of service, to be used in the bath:

R.	Sodii bibor.		
	Sodii bicarb., āā	℥i	30
	Pot. carb.	℥iii	90
	Pulv. amyli	℥iv	120

M. Sig.: One to three tablespoonfuls to each gallon of water, to be used in the bath.

In cases of pruritus the following:

R.	Sodii carbonatis	℥ii	60
	Sodii biboratis	℥ii	60
	Pot. carb.	℥iii	90

M. Sig.: One such powder to be used in thirty gallons of water with one-half a pound of starch. The starch should be previously boiled with water in order to make a clear solution.

The following lotion is recommended in the treatment of acne and eczema:

R.	Pulv. zinci carb. precip.		
	Pulv. cretæ prep., āā	℥i	4
	Glycerini	℥iii	12
	Acidi hydrocyani dil.	℥ss	2
	Liq. calcis	℥iii	90
	Aquæ rosæ		

M. Sig.: To be used locally.

In the erythematous and papular varieties the following combinations are recommended in *Applied Ther.*:

R.	Zinci oxidi	℥ii-℥iv	8-16	
	Acidi carbol.	gr. xx	1	30
	Mucilag. acaciæ	℥ii	8	
	Emul. amygdalæ	℥ii	60	
	Aquæ q. s. ad.	℥viii	240	

M. Sig.: Apply locally.

An ointment similar to the following containing calamin is also recommended:

R.	Calaminæ	℥i	4
	Ung. zinci oxidi	℥vii	28

M. Sig.: Apply locally to the affected parts; or the following:

R.	Calaminæ			
	Zinci oxidi, āā	gr. xl	2	65
	Amyli	℥i	4	
	Acidi salicylici	gr. x		65
	Petrolati q. s. ad.	℥i	30	

M. Sig.: To be used locally.

In the subacute form of eczema the following is recommended:

R.	Zinci oxidi	℥ii	8
	Liq. plumbi subacet.	℥vi	24
	Glycerini	℥ii	8
	Inf. picis liq., q. s. ad.	℥iv	120

M. Sig.: As a local application.

Eczema of the Genitals.

Lutaud, in *Gaz. des Hôpitaux*, recommends the following as a lotion in eczema of the genitals:

R.	Potassii chloratis	gr. xx	1	30
	Vini opii	gtt. xlv	3	
	Aquæ	℥viii	240	

M. Sig.: Apply locally to the affected parts.

Vulvar Pruritus.

H. Guilhot, in *Le Prog. Médical*, recommends the following:

R.	Sodii hyposulphitis	gr. xlv	3
	Adipis lanæ hydrosi	℥i	30

M. Sig.: To be rubbed over the affected parts frequently.

Erysipelas.

The new treatment for erysipelas, according to the *Dietetic and Hygienic Gaz.*, consists simply in covering the affected area and a portion of the surrounding skin with a thick layer of white vaselin. This in its turn is covered with a mask of linen, and held in position by means of gauze bandages. The application is made twice a day. The results obtained by this method are very favorable and gratifying when compared with those following other methods, as painting with tincture of iodin, ichthyol or sublimate solution, etc. Fever, as a rule, diminished within two or three days, pain and tension in the affected parts were relieved, and recurrences were observed with no more frequency than in cases in which other methods were employed. The advantages claimed for this treatment are the absence of pain and irritation which accompanies the application of iodin or the bichlorid.

Medicolegal.

Thirty-Five Thousand Dollars for Loss of Legs.—The Court of Civil Appeals of Texas holds, in Gulf, Colorado & Santa Fe Railway Company vs. Shelton, that where a business man, 49 years of age, who had never been sick a day, was so injured as to necessitate the amputation of his right leg three inches above, and of his left leg nine inches below, the knee, an award of $35,000 damages could not be considered excessive.

Voidable Releases in Personal Injury Cases.—The Court of Appeals at St. Louis, Mo., holds, in the personal injury case of Roberts vs. the Central Lead Company, that where a party signs a release of a cause of action for personal injuries, and at the time is unable to fully understand the nature of the document because of physical and mental weakness produced by his injuries and the necessary use of drugs, a court of equity will rescind the release on timely application and the refunding of its consideration. Where a duty rests on a party to refund a sum of money as incident to the rescission of a release, it should be performed with reasonable diligence, in view of the circumstances. In Houston & Texas Central Railroad Company vs. Brown, the latter party, after his injury, executed a release to the company, relieving it from further liability. The Court of Civil Appeals of Texas finds that the execution of this release was obtained and based upon representations made by a physician who was then the agent and the representative of the company in the treatment of the party at an infirmary, to the effect that the bones of his arm had knitted and united together, and that the arm was well, and that as soon as the swelling had passed away his arm would be as good as ever; that he was on the safe side, and could safely make a settlement with the company for his injuries. This statement and representation by the physician was predicated on a statement by the party to the effect that he was willing to settle with the company, and release it from all claims for damages because of the injuries, whenever the bones of his arm had knit together and his arm was cured. The facts in evidence, the court says, warranted the conclusion that the physician made the representations and statements to the party for the purpose of inducing him to execute the release, and that the party believed the statements were true, and relied upon the same, and was thereby induced to make the settlement and sign the release, while the representations and statements so made were false, in that the bones at the time of the trial were not united, and that the arm was practically destroyed in its usefulness. And the court says that it can not agree with the contention of the company that it might escape liability on the ground that the representations and statements made by the physician were a mere expression of opinion. It was more than an opinion—it was the statement of a fact. The effect of his statement was that the party was a sound man, and that the bones of his arm had knitted together, and that it would be all right. It was true that this statement might have been predicated on his opinion as a medical expert, but the opinion was based on facts of which he possessed knowledge. The fact that the statement made by the physician was not intentionally false did not affect the right of the party to have the release set aside if he was misled by the statement, and executed the release believing the statement was true. In such a case, innocent misrepresentations may as well be the basis of relief as where such statements are intentionally false.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

New York Medical Journal, August 30.

1 *The Education and Development of Neurotic Children. Graeme M. Hammond.
2 *The Passive Carrying Function of the Arm: Its Importance; Its Destruction, and an Operation for Its Restoration. Phil Hoffman.
3 A Harelip Incision. Thomas Fillebrown.
4 Radiodiagnosis of a Case of Traumatic Periostitis. Charles Verge.
5 Gynecology and the Country Doctor. James H. Burtenshaw.
6 The Administration of Chloroform and Ether. Helen Hughes.
7 Amnesia, with Report of a Case. S. D. Hopkins.
8 Nutritive Infusions. Southgate Leigh.
9 The X-Rays in the Treatment of Malignant Growths. J. Rudis-Jicinsky.
10 A Successful Late Laparotomy for Gunshot Wound of the Intestine: Remarks on Suturing. W. J. Pettus.

Philadelphia Medical Journal, August 30.

11 *The Positive Diagnosis of Meningitis, Particularly Tuberculous, by Means of Lumbar Puncture. Alfred Hand, Jr.
12 *Municipal Water-Supplies and Their Examination. William G. Bissell.
13 The Treatment of Pulmonary Tuberculosis. William A. Caldwell.
14 Some Features of Medical and Surgical Study in London and Berlin. A. S. Grimm.
15 Amyotrophic Lateral Sclerosis. Report of a Case. E. J. French.

American Medicine (Philadelphia), August 30.

16 *The Effect of Rest upon the Progress of Septic Infections. A. J. Ochsner.
17 A Case of Primary Malignant Tumor of the Thyroid Composed of Adenocarcinoma and Perithelial Hemangiosarcoma (Sarcocarcinoma). Paul G. Woolley.
18 *Tetanus in the Light of Modern Treatment, with Report of Three Cases. Lawrence E. Holmes.
19 On the Diagnosis of Dementia Precox. William R. Dunton, Jr.
20 *Chronic Carbon Monoxid Poisoning and Carbonyl Hemoglobinuria; the Latter a Hitherto Undescribed Condition. Thomas J. Yarrow, Jr.
21 Strongyloides Stercoralis, the Correct Name of the Parasite of Cochin China Diarrhea. Ch. Wardell Stiles and Albert Hassall.
22 Some Sociologic Aspects of Preventive Medicine. A. B. Cooke.

Medical News (N. Y.), August 30.

23 *The Complications and Sequelæ of Acute Croupous Pneumonia. (Concluded.) H. A. Hare and Arthur Dare.
24 *On the Causes, Variation and Significance of the Color of the Feces. Lewis A. Connor.
25 *Suture of the Solid Viscera. R. C. Coffey.
26 Pulmonary Syphilis: Report of a Case. James M. Winfield.
27 Mosquito Destruction. George A. Soper.

Boston Medical and Surgical Journal, August 28.

28 The Changes in the Spinal Cord and Medulla in Pernicious Anemia. (To be continued.) Frank Billings.
29 *Cases of Prostatectomy, with Remarks on the Operation. Paul Thorndike.
30 *Smallpox: Its Medical Treatment. Michael Kelly.

Medical Record (N. Y.), August 30.

31 *Placenta Previa with Statistics from the Last 11,200 Deliveries of the Sloane Maternity Hospital. Franklin A. Dorman.
32 The Opinions of Different Surgeons and Pathologists as to the Origin and Cause of Fibroid Tumors. Mary A. Dixon Jones.
33 *Some Practical Problems in Sociology Shown by a Study of the Southern Negro. M. L. Perry.
34 Dust, Dirt, Dampness and Darkness as Etiological Factors in Tuberculosis. Charles R. Upson.
35 Out-of-Door Treatment: Its Special Relation to the Preparation for and Convalescence from Operations. N. B. Aldrich.
36 Treatment of Ulcers of the Leg. Cass Chenoweth.

St. Louis Medical Review, August 30.

37 On the Treatment of the Pronated Foot. M. B. Clopton.

Cincinnati Lancet-Clinic, August 30.

38 Landmarks in the Vagina. Byron Robinson.
39 Report of Some Surgical Diseases, with Excerpts from Case-Book of Notes Taken at the Time of Operation. Benjamin B. Cates.

Medical Age (Detroit, Mich.), August 25.

40 Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.
41 The Surgical Treatment of Cholelithiasis. David Barrow.
42 Appendicitis. Hal C. Wyman.

Pediatrics (N. Y.), August 15.

43 *Hydrocephalus, Its Etiology and a Curative Operation Based on Same. H. M. Hunter.
44 A Report of Six Cases of Surgical Erysipelas Treated with the Antistreptococcic Serum, Without Benefit. Edwin Rosenthal.

Northwestern Lancet (Minneapolis), August 15.

45 *Nephropexy, with Especial Reference to the Indications for, and the Method of, Performing the Operation, with Report of Illustrative Cases. A. E. Benjamin.
46 Legal Medicine. J. P. Alexander.
47 Report of Two Cases of Ectopic Pregnancy with Discussion of the Diagnosis and the Time to Operate. George E. Barton.

Virginia Medical Semi-Monthly (Richmond), August 8.

48 *Report on Asiatic Cholera from the Santa Mesa Cholera Hospital.

Annals of Ophthalmology (St. Louis), July.

49 *The Operation of Advancement of a Rectus Muscle. Claud Worth.
50 A Subconjunctival Dermoid Cyst. James M. Ball.
51 Adenoma of the Lachrymal Caruncle, with the Report of an Additional Case. C. A. Veasey.
52 A Clinical and Histological Study of a Case of Melano-sarcoma of the Choroid. Frederick Krauss.
53 *Pathogenesis of Glaucoma. M. Uribe Troncoso.
54 An Operation for the Advancement of the Straight Muscles of the Eye, with Two Modifications, and Remarks upon the Theory of Its Action. Herbert W. Wooton.
55 A Clinical and Pathological Report of Two Cases of Choroidal Sarcoma Diagnosed in the First Stage and Removed by Enucleation—No Recurrence. H. V. Würdemann.
56 A Remarkable Vascular Growth into the Vitreous. J. E. Jennings.
57 Amyloid Degeneration of the Conjunctiva. L. A. W. Alleman.
58 A Modification of the Abney Pellet Test for the Ready Detection of Central Scotomata. Charles A. Oliver.

Woman's Medical Journal (Toledo, Ohio), August.

59 The Dangers of the Menopause. Sara E. Greenfield.
60 Amenorrhea. Florence Patrick.
61 Errors of Refraction as a Causative Factor in Headaches. Rosamond L. Cox.
62 Practical Points on Obstetrics. Bertha M. Greer.

American Journal of Insanity (Baltimore), July.

63 *The Criteria of Insanity and the Problems of Psychiatry. E. Stanley Abbot.
64 *On the Typhoid Psychoses. Clarence B. Farrar.
65 *Some Points in the Diagnosis of Dementia Precox. William R. Dunton, Jr.
66 A Case of Huntington's Chorea with Autopsy. Glanville Y. Rusk.
67 *On Some Terminal Diseases in Melancholia. Adolph Meyer.
68 Hydriatic Procedures as an Adjunct in the Treatment of Insanity. Emmet C. Dent.
69 Medicolegal Phases of the Vermont Observation Law for Criminal Insane. Walter D. Berry.
70 The Possible Influence of Rational Conversation on the Insane. Jas. M. Buckley.

Canada Lancet (Toronto), August.

71 A Case of Tetanus. Thomas Wylie.
72 The Treatment of Pneumonia. J. C. Mitchell.
73 Cancer of the Breast. T. K. Holmes.
74 The Role of Education in the Development of Self Control. W. H. Hattie.
75 The Management of the Various Forms of Nasal Obstructions. (Continued.) Perry G. Goldsmith.

Archives of Pediatrics (N. Y.), August.

76 *A Case of Chondrodystrophy Fetalis. John L. Morse.
77 *The Management of Rheumatic Children. Floyd M. Crandall.
78 *The Use of the Term "Enanthem." F. Forchheimer.
79 Report of a Case of Typhoid Fever Complicated with Pneumonia and Followed by Laryngeal Diphtheria. Edwin Rosenthal.
80 Aluminum Cream Dipper. Addison W. Baird.

Colorado Medical Journal (Denver), June.

81 Incentives. Frost Craft.
82 Landmarks in the History of Medicine. F. E. Waxham.
83 *Address on Behalf of the Alumni. Martin E. Miles.
84 Complete Prolapse of the Uterus, Hysterectomy and Ventro-Suspension of the Cervical Stump; Report of a Case. I. B. Perkins.

Chicago Medical Recorder, August 15.

85 *Crossed Eyes and Their Treatment. J. Elliott Colburn.
86 *A Case of Typhoid Fever, with Temperature of 108 F. Followed by Two Distinct Relapses—Recovery. John S. Perekhan.
87 Clinical Notes upon Abdominal Section for Puerperal Sepsis. Henry T. Byford.
88 Surgical Treatment of Neuritis. Weller Van Hook.

Medical Mirror (St. Louis), August.

89 The Early Diagnosis of Uterine Cancer; Operative Limitations. John O. Polak.
90 *Nasal Obstructions. Dudley S. Reynolds.
91 A Few Observations on the Treatment of Anemic Conditions. J. H. Rider.
92 Ergoapiol (Smith) in Diseases of the Female. Charles H. Shepard.
93 Why Should We Not Treat the Gall-Bladder as We Do the Appendix? Roswell Park.

Medical Review of Reviews (N. Y.), July 25.

94 Types of Pneumonia Occurring in Childhood. Floyd M. Crandall.

Pacific Medical Journal (San Francisco), August.

95 The Physiologic Unit. George Adam.
96 The Use of Carbonated Waters at Meals. Alfred W. Perry.
97 *The Natural Juices of the Stomach of Dogs, Succus Naturalis Ventriculi Canis, as a Therapeutic Remedy in the Treatment of Chronic Affections of the Stomach, Including Also Cancer of That Organ. George I. Bluhm.

Vermont Medical Monthly (Burlington), July 25.

98 Medicolegal Phases of the Vermont Observation Law for Criminal Insane. Walter D. Berry.
99 A Few Cases of Abdominal Surgery. C. E. Chandler.
100 Infantile Mortality. E. M. Brown.
101 Gallstones as a Surgical Affection. (Continued.) S. H. Weeks.

Southern California Practitioner (Los Angeles), August.

102 *Oophorectomy: Its Effect on the Mind and Nervous System. Walter Lindley.
103 The Pregnant Mother and the Obstetric Nurse. George E. Abbott.
104 The Medical History of Sir Walter Scott. Roberts Bartholow.

New Yorker Medicinische Monatschrift, July.

105 Was können wir bei acuter Appendicitis diagnosticiren? Willy Meyer.

Medical Herald (St. Joseph, Mo.), August.

106 Medical Examinations in Our Public Schools. E. A. Donelan.
107 The Diagnosis of the Causes of Sterility in Women. Palmer Findley.
108 The Vermiform Appendix as a Cause of Intestinal Obstruction. J. E. Summers, Jr.
109 A Case in Which a Large Bone Cavity Was Healed by Means of Thiersch Grafts. John P. Lord.
110 Recent Advances in the Treatment of Epilepsy. Harold N. Moyer.

Alabama Medical Journal (Birmingham), August.

111 *Complications and Sequelæ of Typhoid Fever with Report of Cases. Ira J. Sellers.
112 Diagnosis and Treatment of Appendicitis. J. A. Goggans.
113 Infectious and Contagious Diseases in Schools. R. F. Wilkinson.
114 *Preliminary Note on a New Quinin Derivative (Saloquinin). H. P. Colle.

New Orleans Medical and Surgical Journal, August.

115 The Value of Co-operation in the Sanitary Control of Our Periodic Epizootics of Anthrax. W. H. Dalrymple.
116 Syphilis of the Nose. W. Scheppegrell.

Occidental Medical Times (San Francisco), August.

117 Fractures of the Pelvis, with Report of Three Cases. Emmet Rixford.
118 Lobar Pneumonia, Followed by Pneumococcus Infection of the Right Antrum, Lachrymal Duct, and a Pseudo-membranous Angina, and Six Days Later by a Typical Diphtheria. Philip King Brown.
119 The Etiology and Diagnosis of Appendicitis. Alfred Eichler.
120 On the Treatment of Talipes Equino-varus Congenitus. James T. Watkins.
121 *Treatment of Spinal Tuberculosis. S. J. Hunkin.
122 *Symptoms and Diagnosis of Pott's Disease of the Spine. E. G. Frisbie.
123 Thyroid Extract in Gynecology. J. Coplin Stinson.
124 A Case of Tetanus Successfully Treated with Eserin. Clyde B. Laughlin.
125 Erysipelas. A. B. Grosse.
126 Recent Therapeutic Advance in Ophthalmology. William E. Briggs.
127 *The Prevention of Post-Operative Adhesions. J. Henry Barbat.

Canadian Practitioner and Review (Toronto), August.

128 Rubber Splints in the Treatment of Septal Curvature. J. Price-Brown.
129 The Doctor and the Medical Society. John Hunter.
130 The Production of the Sex at Will. James S. Freeborn.
131 The Filling of a Long-Felt Want. H. S. Hutchison.

Journal of Medicine and Science (Portland, Me.), August.

132 *Antisepsis and Asepsis in General Practice. N. M. Marshall.

Texas Medical Journal (Austin), August.

133 Recent Cases of Abdominal Surgery. Henry K. Leake.
134 Membranous Stomatitis Complicating Pneumonia; Eight Cases Reported. J. M. Frazier.
135 Ergonpiol (Smith) in Diseases of the Female. Charles H. Shepard.

Atlanta Journal-Record of Medicine, August.

136 The Origin of Alcohol. W. B. Parks.
137 *Experiment with Light in the Treatment of Pulmonary Tuberculosis. Robert F. Williams.
138 Laws of Nature. E. G. Ferguson.
139 The Importance of Diagnosis and Treatment in Diseases of the Stomach. Jno. C. McAfee.

Medical Summary (Philadelphia), August.

140 Practice vs. Theory in Rhinological Surgery. Carl Seiler.
141 The Typhoid Crisis. O. Henley Snider.
142 Infant Diarrhea. J. Hobart Egbert.
143 Some Hints as to Ichthyol, Emarol, and a New Cure for an Old Enemy. Geo. H. Candler.
144 A Short Talk on "Life." C. H. Scoville.
145 The Causes and Treatment of Offensive Breath. Charles W. McIntyre.
146 Summer Diseases in Children—Leading Causes. A. B. Woodward.

Peoria Medical Journal, August.

147 Pathology of the Kidney in Croupous Pneumonia. E. C. Franing.
148 Significance of Blood in the Urine. Sumner M. Miller.
149 La Grippe. W. B. Parsons.
150 Brow Presentations, with Report of a Case. C. U. Collins.

Dominion Medical Monthly (Toronto), July.

151 *Medical Testimony in Courts of Law. Judge MacDougall.
152 Hydrobromic Ether; Notes upon Its Use as an Anesthetic in Adenoids and Tonsil Operations. D. J. Gibb Wishart.
153 Clinical Notes on a Case of Membranous Glossitis. A. Jerome Harrington.
154 A Case of Facial Paralysis Due to Chronic Suppuration of the Middle Ear. Perry G. Goldsmith.

Medical Bulletin (Philadelphia), August.

155 Lupus Vulgaris and Lupus Erythematosus. John V. Shoemaker.
156 Impacted Cerumen. E. B. Gleason.
157 An Obstinate Case of Tinea Tonsurans Successfully Treated with Benzoyl-Acetyl-Peroxid (Acetozone). Allan P. MacDonald.
158 Address to the Graduating Nurses of the Training School of the Reading Hospital. J. Y. Hoffman.

Merck's Archives (N. Y.), August.

159 Thyroid Extract in Gynecology. J. Coplin Stinson.
160 Iron in Anemia. W. C. Cooper.
161 The Korean Pharmacopeia, Account of Some of the Queer Insect and Vermin Drugs of Korea. L. Lodian.

Memphis Medical Monthly, July.

162 Is the Medical Profession Entitled to Representation in the "Hall of Fame"? Jere Lawrence Crook.
163 Pneumonia. B. G. Henning.
164 Medical Examination for Life Assurance. L. M. Van Meter.
165 Diagnosis and Treatment of Fractures of the Neck of the Femur. Battle Malone.
166 Thoughts on Menstruation. Byron Robinson.

Old Dominion Journal (Richmond, Va.), July.

167 Experiment with Light in the Treatment of Pulmonary Tuberculosis. Robert F. Williams.
168 Inflammations of the Fallopian Tubes. Charles R. Robins.
169 Summer Diarrhea of Children. W. L. Harris.
170 Malaria and Pregnancy. A. B. Greiner.
171 Chronic Alcoholism. Frank M. Reade.

Georgia Journal of Medicine and Surgery (Savannah), May.

172 Throat Troubles in Scarlatina. O. Henley Snider.
173 Treatment of Typhoid Fever. C. T. Nolan.
174 Influenza in Children. J. Howe Adams.
175 Accidental Cures. Monstrosities and Adventitious Growth. F. M. Brantley.

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1. **Neurotic Children.**—Neurotic children are defined by Hammond as those whose nervous force is below the normal standard. The nerve elements, either from heredity or accident, or both, are poorly developed and are therefore incapable of normal resistance and never reach proper physical development. He believes by proper training these handicaps for the future can be removed and that the training should begin as soon as the neurotic element is discovered. He lays much stress on the diet, which should be mainly nitrogenous. He has no confidence in the notion that epilepsy is favored by this diet. Caution should be given as to overfeeding. Moral treatment is of great importance; the child should be required to be kept firmly in hand, and taught strict obedience and self-restraint and to control the emotions. It is advisable not to press the intellectual development; this is specially important up to seven or eight years of age. The education should be very cautiously advanced; such children need restraint more than others, with careful attention to the diet, sleep, the bodily functions, fresh air and proper clothing. With systematic, well-regulated and long-continued physical culture there should be no remains of the neurotic predisposition as the child enters manhood.

2. **The Carrying Function of the Arm.**—Hoffman points out the abnormalities of the arm affecting its passive carrying function. The forearm should diverge from the upper arm at an angle of about 170 instead of a straight line and destruction of this carrying angle may be brought about by fractures, rachitis or anything that changes the articular surface from one facing a little outward to one facing directly downward or slightly inward. He illustrates his views with pictures and describes his operation, in which he made a dissection of the soft parts to the humerus just above the inferior condyle, cutting three-fourths through the bone and reflecting it slightly outward, making a new carrying angle above the joint. He operates from the inner side to avoid involving the musculospiral nerve, and because it is better to bend the bone away from the cut and toward the position of correction, thus leaving unbroken the covering of the periosteum on the outer side. Simple section of the inner side will give a longer arm than a cuneiform operation on the outer.

11. **Meningitis.**—The value of lumbar puncture in the diagnosis of meningitis, especially tubercular meningitis, is insisted on by Hand. Only a few of the ordinary objective symptoms of meningitis may be present and many of them may be present when meningitis is not. The changes which occur in the cerebrospinal fluid as the result of meningitis are diminution or absence of sugar, the increase of albumin, and excepting in the simple serous meningitis, the presence of leucocytes, bacteria and frequently endothelial cells. The presence of sugar when other signs indicate meningitis is suggestive of tubercular disease, but its absence does not exclude tuberculosis. Complete absence of sugar is said to be the rule in other forms of meningitis except in the serous in which it is much diminished. The normal amount of albumin in the cerebrospinal fluid is said to have the maximum unit of .25 per 1000. It is usually reduced in meningitis, though it may also be reduced in the normal cases, and in tuberculous meningitis it seems to be rather higher than in other forms. According to Hand's experience a definite count of leucocytes is often difficult or impossible, but when the handling is very careful, the count is of great value. He found polynuclears in excess in all the cases in which tubercle bacilli were not discovered. The bacteria which he has found have been the tubercle bacillus, the pneumococcus, unidentified cocci, and an intracellular diplococcus, probably the meningococcus, which did not grow on blood serum or agar. In several cases the tubercle bacilli were associated with cocci so that the presence of other germs does not exclude tuberculosis. He describes his technic as follows: "The fluid should be allowed to drop from the needle into a sterile test-tube, which is then stoppered with cotton and allowed to stand for several hours, or until a strand of fibrin has formed; this occurs in from 1 to 6 hours, and it either settles to the bottom or reaches from the top of the fluid down to the bottom, spreading out in a fan-shaped delicate film. A straight platinum needle, not a loop, is touched to one edge of the fibrin, the adhesion being very firm; the fibrin is then transferred to a slide, care being taken to tip the test-tube so that the fibrin constantly floats in liquid; a few drops of the fluid are to be poured with the fibrin on to the slide, for, if the fibrin emerges for but an instant from the fluid, it will either roll up into a cord through which nothing can be seen or it will wrap itself so tightly around the platinum needle that it can not be detached; to prevent this, the edge of the test-tube should be flanged and not straight; when once on the slide and floating in the fluid, it can be carefully separated from the tip of the platinum needle with the help of an ordinary needle or pin; the excess of fluid is drained off from the slide and the remainder is evaporated by gentle heat, it being not only unnecessary but usually fatal to the success of the examination to press the fibrin between two slides; the film is fixed by heat, stained in the usual manner and then carefully gone over with a mechanical stage. A point for the protection of the examiner is worth mentioning; all of the germs are not caught in the fibrin, but some float free in the fluid, and it is well to flood the slide even to the risk of overflowing, a blotter or piece of filter-paper placed beneath the slide will absorb both the fluid and the stray germs, and disinfection is then easily accomplished by combustion; if the blotter is dark in color, the film of fibrin can then be seen much more easily and located on the slide. The next step in the examination is the taking of cultures; in the above series, cultures were obtained of pneumococci and of staphylococci twice each, all the other cultures remaining sterile. After the chemical examination, for which 5 c.c. will suffice, the remainder can be used for inoculation into guinea-pigs if this is deemed advisable; this is hardly necessary if tubercle bacilli have been found, but it is very desirable in all other cases and should be carried out, if possible, for then the exclusion of tuberculosis rests on unassailable ground; in but two of my non-tuberculous cases were inoculations made."

12. **Water Supplies.**—Bissell discusses the water supplies of cities and specially calls attention to the determination of the colon bacillus. The colon test properly made under certain conditions, he says, surpasses chemical means of analysis, both in delicacy and as an indicator of sewage pollution and is the greatest accessory in determining the relative degrees of safety under which a water supply may be used for household purposes.

16. **Rest and Septic Disease.**—Ochsner insists on the importance of absolute rest in septic infections, and he has become more and more impressed with the part which this element plays in the treatment. He says if complete rest is obtained by removal by gastric lavage of any food or mucus which may exist in the stomach, and then prohibiting the use of food and cathartics by the mouth, the inflammation will regularly remain circumscribed in the presence of gangrenous or perforative appendicitis, while it will as readily become diffuse if these precautions are not taken, unless at the same time the local cause of infection, the appendix, be removed and free drainage of the peritoneal cavity instituted. In other septic conditions it is also of value. He illustrates this by the result of strapping in the treatment of mastitis and the use of splints or plaster of paris casts in inflamed joints, strapping the chest in pleurisy, a dark room and bandaging of the eyes in conjunctivitis, etc. The element of rest should be borne in mind in the treatment of all forms of inflammatory conditions in any part of the body.

18. **Tetanus.**—The treatment of tetanus is reviewed and almost every form of medication used is shown to be ineffective. He asks, what are we to do in the case of tetanus? In the absence of any reliable remedy, and realizing the great fatality of the disease, it is only right that we should give the patient the benefit of every doubt and possibility. If there is a wound it must, of course, be thoroughly cleansed, and in rare cases and under certain conditions, amputation of a limb is advisable. The patient must be put in a darkened room and kept as quiet as possible. Antitoxin should be at once administered freely, and continued daily in large amounts, as frequently as the condition indicates. The hypodermic is the simplest method of administration, and probably as efficacious as any, though the intraspinal may be tried, if convenient. At the same time I would strongly recommend the hypodermic use of carbolic acid, as I know of no reason why the two methods of treatment should not be tried at the same time. Sedatives should be given freely, the amount being determined by the condition of the nervous system and their effect on the heart. Opium should never be omitted, the more powerful depressants being given as required; but in our efforts to allay the nervous irritability, we must be careful not to depress too much, as it is important to keep up the strength, especially in the chronic cases. During the convulsions inhalations of chloroform or amyl nitrite may be tried, but are not of much value, as during the spasms breathing is so greatly interfered with that very little of their vapor could reach the lungs. In some cases, late in the disease, stimulants may be indicated, though they should always be administered with caution, strychnia, of course, being avoided under all circumstances so long as the disease is in its active stages. During convalescence, it may be profitably employed. The question of feeding may come up and it is often impossible by the mouth and rectal feeding must be resorted to with hypodermoclysis of normal salt solution to relieve the thirst.

20. **Chronic Carbon Monoxid Poisoning.**—The dangers of coal gas or water gas are emphasized by Yarrow, who remarks that chronic monoxid poisoning occurs more frequently than is imagined, and is undoubtedly responsible for many obscure conditions which occur in the practice of every physician. The large consumption of gas for cooking purposes does not lessen the evil. He pleads for the more extensive use of the spectroscope in daily clinical work. The article contains reports of cases illustrating his views.

23. **Croupous Pneumonia.**—Hare and Dare in a study of the complications and sequelæ of croupous pneumonia independent of those from mechanical causes, conclude that they are best studied and classified as pneumococci infections. Their paper gives an arbitrary classification for easy remembrance. The series is composed of six classes as follows:

CLASS A.

Serous membranes	Pericardium	Serous and purulent pericarditis.
	Pleura	Serous and purulent pleuritis and that affecting the diaphragmatic pleura.
	Endocardium	Endocarditis. Malignant endocarditis. Ulcerative endocarditis, endocarditis with or without meningitis, or cerebrospinal meningitis.
	Synovial membranes	Serous arthritis. Purulent arthritis. Osteo-arthritis.

The infection by the pneumococcus may cause pathologic changes in the central nervous system by the action of the toxins on the nerve centers.

CLASS B.

(a) Cerebral and cerebrospinal system	Cerebral pneumonia. Meningitis. Meningitis due to pressure of exudate. Cerebrospinal meningitis. Hemiplegia. Paralysis. Cerebral abscess. Aphasia.
(b) Toxic action on the nerve centers	Delirium. Mania. Convulsions. Cardiac asthenia, resulting in delayed resolution, abscess and gangrene. Brachial neuritis. Bilateral polyneuritis. Trophic disturbances (herpes zoster). Temperature disturbances (hyperpyrexia) (subnormal ranges). Albuminuria and nephritis. Retention of urine.
(c) Neurotic tendencies	Tetanoid and choreiform phenomena.

Changes in the blood and intravascular formations.

CLASS C.

(a) Intravascular (thrombosis and embolism)	Pulmonary gangrene, abscess and bronchiectasis. Spontaneous gangrene of lower extremities. Embolism of right lenticulo-optic arteries. Phlegmasia alba dolens. Renal and splenic emboli. Embolism of the brachial veins.
(b) Hemic changes	Purpura hemorrhagica. Hemoglobinuria.

CLASS D.

Infection of glands and glandular structures	Parotitis. Suppurative parotitis. Bronchial adenitis. Submaxillary adenitis. Thyroiditis. Orchitis. Ovaritis and abscess. Hepatitis.

CLASS E.

Infection of middle ear	Otitis media. Purulent otitis media.

CLASS F.

From mechanical interference	Edematous laryngitis. Fatty tumor of right auricle. Jaundice, from obstruction of the bile-ducts. Dilatation of right heart from pulmonary obstructions (?) or toxic myocarditis. Delayed resolution and induration from cardiac asthenia.

24. **Color of the Feces.**—The normal feces are brown, of varying degrees of darkness, which are due largely to the bile pigment and are influenced by other causes such as digestive secretions, food residue, discharges from the intestinal wall and accidental ingredients such as drugs. The bile pigment is bilirubin, which in part is oxidized, either in the bile passages or soon after reaching the intestines, into biliverdin and several allied bodies. The pancreatic juice may have some influence, but not much under normal conditions. As a rule a vegetable diet produces much lighter colored stools than does a diet chiefly of meat. In infants the feces are of an orange-yellow color or that of the yolk of an egg. The intestinal discharges are mucus, pus, serum, blood, etc., which may modify the color, pus, for instance, giving a distinct yellow or yellow-greenish color; serum giving a straw-color where the usual fecal pigments are lacking as in cholera. Blood may make various changes in the color and certain articles of diet like cocoa, huckleberries, etc., may produce an appearance which may be easily mistaken for disorganized blood. Among the drugs Conner mentions are bismuth, which produces a blackish or dark green color due to bismuth oxydyl and not to bismuth sulphid as so commonly believed. The greenish stools attributed to calomel are not so frequent as supposed; a blackish-gray color occurs from iron, the yellow-colored from rhubarb, senna and santonin. The clay-colored stools of jaundice are well known, and he quotes Bunge as attributing this more to the presence of fat than to the absence of bile. Greenish stools are common in children but rare in adults excepting in certain cases of diarrhea, where Fleischer believes that they occur only when there is an inflammation with increased peristalsis of both small and large intestine and never when one or the other alone is involved, since in these cases either would have time for the reduction of biliverdin to hydro-bilirubin.

25. **Suture of the Liver.**—After we pass Glisson's capsule, according to Coffey, the softer structures of the liver have no more power to retain sutures to control and counteract blood pressure than so much mush. He thinks it of no use to apply sutures directly to the liver tissue for this purpose and employs a mattress suture where all the pressure comes on Glisson's capsule at three or four points. The pressure is all the time toward the center of the incision and obliterates all the space at the bottom. Two sutures are used, one being applicable to an incision which does not penetrate the liver entirely, and the other is applicable to wounds in which the liver is severed through and through. One he calls the Y-suture, the other the X-suture. The Y-suture is placed as follows: "A round curved needle, at least four inches long, armed with catgut or silk, is passed through the catgut support to the bottom of the incision, comes out on the other side, passes through another catgut support, re-enters through the support of the same side, goes back parallel to the other stitch and comes out through the support from which we started, making a quilt suture. A suture is then passed from the opposite side of the liver, either straight through or indirectly, as may be convenient, includes the two threads at the bottom of the cut in its loop, comes out on the bottom of the liver and again both ends passing through a single catgut weave are tied in the form of a quilt suture, thus drawing the other suture well into the bottom of the cut. The first suture is now tied and any amount of pressure can be used, for the line of pressure is not against the suture, but is on the catgut supports. Thus the bottom of the wound is brought in absolute apposition and any amount of pressure desired may be used. This may not bring the surface of the liver in as close contact as is desired, therefore, a second quilt suture is passed through the edges of the support, nearest the wound, simply taking in the capsule. In this way the tissues are absolutely brought in contact, and as much pressure can be brought to bear in closing a wound of the liver as in any other part of the body. In closing a wound of the liver which extends entirely through its substance, a modification must be used. Instead of the single suture which goes into the bottom of the liver, a second quilt stitch is passed through both sides on the bottom, the same as the Y-suture above, interlocking the two sutures to the center of the wound. In this way the pressure is brought to bear in a very effectual manner." The cuts which illustrate the article give a better idea of the suture than the description and the reader is referred to the original. Coffey says as far as he knows this method is entirely new, but he is conducting experiments on living animals to find the amount of catgut that will be absorbed. The points which are original are the use of the catgut weave for a support and the indirect or angular pressure made by a counter-traction suture. The needle should be round, full-curved and fully four inches long. The one with which the counter-stitch is made may be a simple darning-needle or any kind of a long straight needle.

29. **Prostatectomy.**—Thorndike remarks in favor of prostatectomy and reports a number of cases in which the suprapubic operation was performed. He gives the details of the procedure used from Fuller and sums up his conclusions as follows: 1. That great relief can be given to all patients

suffering from symptoms due to obstructing enlargement of the prostate, either by palliative or by operative means. . . . 2. That complete prostatectomy is always the operation of choice, because it is the only operative procedure which cures or gives uniformly good results, when successfully performed in proper cases. 3. That the best time for its performance is just as soon as palliative efforts have failed, or are manifestly impossible of execution, and before secondary changes in the bladder and kidneys, due to long-continued obstruction, have taken place. 4. That in those cases which come for surgical relief so late in the development of the pathologic conditions, that the bladders and kidneys are extensively diseased, and the patient is manifestly exhausted by long-continued suffering, other less certain and perhaps less severe measures may be advised, instead of a complete prostatectomy; but that such a decision can only be and must always be made by the surgeon for the individual case, and can not be made the subject of a generalization.

30. **Smallpox.**—The treatment of smallpox, of course, varies with the severity of the disease, and varioloid aside from the relation to the public need often cause but little inconvenience. Treatment is scarcely necessary, in many cases, but in the discrete or confluent smallpox, the indications for treatment are to preserve the patient's strength and relieve the skin manifestations. During the incubation period little is to be done, except to prevent anything that would debilitate. In the stage of invasion rest in bed is necessary, exclusion of solar light, use of tonics, phenacetin and other analgesics to relieve the headache, backache, etc., and ice for gastric irritation. Poultices or rubber bags filled with hot water applied to the stomach or back to relieve the distressing symptoms in these parts are contraindicated. Only easily digestible and good nutritious food should be employed. Stimulants are useful and agreeable adjuvants. Mild laxatives may be given in the early stage and continued if necessary. The pain and tenderness in the skin and the itching which develops are relieved by application to the parts of cloths wrung out of cold or hot water according to the patient's choice, and frequently changed. Gargles of chlorate of potash when the patient can use them are of benefit, but the greatest relief is obtained from a careful rinsing of the mouth by the nurse with a piece of clean old linen wrapped around her finger and previously dipped in a 1 to 20 per cent. solution of boric acid. The intense itching in the late pustular or suppurative stage is relieved by the mixture recommended by Dr. Hare: olive oil and lime water, equal parts, to which a little carbolic acid or thymoline is added. During the height of the secondary fever, the fever of suppuration, daily bichlorid sponge baths only can be given, as the patients are too sore and too much swollen to make feasible the giving of immersion baths. When suppuration and the secondary fever have subsided, and the crusts have fallen, the patient is given three thorough antiseptic baths at intervals of twenty-four hours. He then gets a clean, fresh suit of clothes and is removed to an uninfected part of the building. In the usually fatal hemorrhagic disease Kelly finds the remedies in regard to which there is most agreement among writers as to their efficiency are turpentine and ergot in liberal doses, carbonate of ammonium, quinin and the practice of transfusion.

31. **Placenta Previa.**—From statistics collected, Dorman draws the following conclusions: 1. That uterine relaxation and endometritis as important etiological factors are well shown; 2, that the immense variation in the types of bleeding should warn us to look on every bleeding at any time in pregnancy with suspicion; 3, that the very great possibility of sepsis should cause us to employ every precaution in asepsis. The necessity for exceptional care during the breech extraction, where the cervix is not completely dilated, is apparent. The cervix in this condition is unusually vascular and soft, and tears with fatal readiness. The chances are so great against the child that any eagerness to save it should not lead us to add risk to the mother's life. In connection with postpartum hemorrhage he mentions the danger of too great dilution of fluid by intravenous transfusion so that it will lose its power of clotting and the watery fluid will ooze through the tightest tampon. He therefore advises moderation in the amount of infusion. Repeated infusions of smaller amounts are preferable to one or two large ones. He suggests also the possible value of Cesarean section where the placenta is central or nearly so, the cervix rigid or undilated and the patient in a good condition, but this combination is very rarely found.

33. **The Southern Negro.**—According to Perry the southern negro is degenerating badly. He calls attention particularly to the prevalence of venereal diseases, showing that immorality is increasing. Tuberculosis is another disease which has become a scourge to the race, and it should be considered as almost entirely infected. The resistance to disease is lowered in the negro race. How much is due to these two causes is impossible to say. He thinks their part has been a major one. Insanity is next. In the last forty years the negro population of the state has been a little more than doubled, while the number of insane has increased twentyfold, the most rapid change that has ever been recorded in the history of any race. He finds little hereditary insanity existing at first, and attributes much of the physical and mental breakdown to the removal of healthy restraint and the tendency to migrate to cities and towns. In conclusion he notices the drug habits which he thinks are greatly increasing among the colored population of the towns, though the cocain habit seems to be decreasing since the law has taken the matter up. He mentions these facts as affecting the race as a whole, but not at all reflecting on honest negroes who are endeavoring to raise their race to a higher level.

43. **Hydrocephalus.**—Hunter has treated cases of hydrocephalus by opening through the dura, making a flap, and introducing a catgut ligature through the cortex into the lateral ventricles. After the first operation the improvement continued for six or eight weeks, but enlargement of the head increased and a second operation was performed. The child's condition was, therefore, as critical as it was at first, except the fever was lacking. He concludes that the reaccumulation of liquid was due to failure to secure a permanent opening between the ventricle and subdural space on account of the too rapid absorption of the very small ligature used in the first operation. He therefore used the larger No. 2 catgut, five strands, in his second operation, and with apparent perfect success. The child has now well-developed lower extremities and walks and runs about with other children two years after the operation.

45. **Nephropexy.**—The operation which is most satisfactory, according to Benjamin, is described by him as consisting mainly "in dissecting a strip of the fibrous capsule in a longitudinal direction, making two flaps, one at either pole of the kidney. When the dissection is made in this direction we shall have flaps long enough to bring up between the quadratus lumborum muscle fibers on either side of the wound and can fasten them in that position. The muscle fiber impinging upon these flaps gives additional support, and does not permit the sutures to cut through the capsule. When the flaps are dissected in the other direction, transversely, the flaps secured are very short and are of little avail as a support, for they are not long enough to bring up between the muscle fibers. The technic of the rest of the operation is about as described by other authors." He concludes as follows: "1. A certain percentage of prolapsed kidneys causes discomfort. 2. Prolapsed kidney often produces reflex symptoms. 3. Prolapsed kidney is often associated with various complications or dependent conditions. 4. Symptoms depending upon prolapsed kidney are frequently attributed to other sources. 5. The degree of prolapse does not always determine the proportionate amount of discomfort. 6. When the symptoms present have been traced conclusively to a prolapsed kidney, and when the suffering can not be relieved by pads or bandages, an operation should be advised. 7. The operation should be one which will anchor the kidney most securely in the position most comfortable to the patient. 8. The operation, properly performed, gives most satisfactory relief."

48. **Cholera.**—This number contains the report of Dr. T. R. Marshall to the Philippine Commission of Public Health on

Cholera, which seems to have been of an especially virulent type in the hospital reported from. Benzozone was used in some cases but found too irritating to the stomach in many others. Some advantage was obtained from rectal injections of normal salt solution and saline transfusions. He found that cases seen shortly after an attack and properly treated at home or removed to a hospital stood a chance of recovery, but a delay of five or six hours generally proved fatal.

49. **Rectus Advancement.**—The operation described in detail by Worth consists essentially in making two sutures, one above and one below on the muscle, both tied. One end of the thread is carried back, inserted through the muscle behind it and carried forward to near the corneal margin where it is brought out and again tied to the other end of the suture, left after tying the first. In this operation the central portion of the muscle is not constricted by suture and its main blood supply not interfered with. He says the immediate effect produced is the final result.

53. **Pathogenesis of Glaucoma.**—Troncoso holds from his statistics that the hypertension in glaucoma results from different exosmosis of aqueous which has thereby become more albuminous than normal, and in which vascular sclerosis is the principal factor. It occurs either as the result of a senile arteriosclerosis, or an arthritis, gout, etc., or as the result of localized endarteritis within the eyeball. The vessel walls become permeable to the albumin which, mixed with the contents of the anterior chamber, retards the proper filtration at the filtration angle. When the secretion of the albumin reaches a certain degree, the excretory passages still intact become insufficient, the intraocular tension rises until the augmentation of new aqueous equalizes the tension within the vessels, when secretion of aqueous is checked. Somewhat before this the first symptoms of glaucoma appear; the edema of the cornea, the moderate dilatation of the iris, the swelling of the retinal veins, the arterial pulsation, the periodic reduction of vision, the periorbital pains, etc., all phenomena dependent upon increased intraocular tension and venous stasis. Such attacks are nearly always associated with some mental emotion, a reflex congestion of the veins of the head, with insomnia, etc., producing a vasomotor dilatation showing itself chiefly in the vessels of the ciliary body. When these become severe, the disturbances progress by degrees until an acute attack of glaucoma breaks out. The amount of albumin increases, rapidly inhibits filtration and the tension rises. An intense congestion is produced in all the tissues of the eyeball accompanied by mild diapedesis (Knies). The cornea is infiltrated and becomes turbid, the iris is edematous, losing its normal appearance, its veins are dilated and tortuous, the uvea is copiously infiltrated. The vitreous presses forward the iris and lens and adds a new factor to encourage retention. He discusses the effect of iridectomy, myotics, complications of central and secondary glaucoma, and in conclusion reports experiments on rabbits with injections of albumin into the anterior chamber producing glaucomatous symptoms.

63. **The Criteria of Insanity.**—Abbot emphasizes the following points: "1. Insanity is a mental disease as shown by the criteria actually used in the determination of its presence or absence in the individual case; 2, the scientific study of insanity consists primarily in the study of the mental phenomena, not physical conditions; and 3, the study of physical conditions as possible causes is necessary, but loses a large part of its value unless the mental phenomena have been well studied, and of itself alone can never give us an understanding of insanity." The practical application of the paper lies in the fact that with modern scientific methods scientific psychiatric work can be done in the hospitals not equipped with laboratories.

64. **Typhoid Psychoses.**—These conditions are discussed at length and Farrar remarks in conclusion that typhoid fever attacking a sane person may leave him free of psychic disturbance or may give rise to all gradations of mental disease. That the severity of the symptoms do not necessarily stand in relation to the height of the fever or the severity of the infection and that subjects of psychopathic heredity are more prone to alienation, especially initial delirium, than those not thus burdened; that a protracted exhausting fever predisposes to an asthenic psychosis; that a second or third attack of typhoid is more likely to present mental troubles than the first. Of the special disease types the initial delirium is the rarest form, has the most rapid course and worst prognosis, over 50 per cent. ending fatally. It is essentially the expression of severe intoxication. The Nissl findings confirm this view. It often causes errors in the diagnosis and any case of mental derangement with fever justifies the suspicion of typhoid. The febrile psychoses are, of course, of the greatest frequency and afford the best outlook; that 25 per cent., however, persist for varying lengths of time into or after convalescence, and are especially due to the elevation of temperature and its consequences. The asthenic psychoses (excepting *conceptions délirantes isolées*, and cases of typical collapse delirium), have long weary courses and a doubtful outlook, with evidences of serious cerebral changes. They develop on a basis of exhaustion, anemia and malnutrition. There is, moreover, a post-typhoid predisposition (irritable weakness) which may develop late psychoses, with dubious prognosis. As a result of the metabolic revolution accompanying severe infections, it is observed that an attack of typhoid has been followed in many instances of so-called recoverable psychoses, by temporary improvement or recovery. Finally, he says that neither in their clinical or anatomical picture are typhoid psychoses distinguishable; that the elements of intoxication, infection, temperature, exhaustion, anemia, of whatever origin, may produce similar or indistinguishable appearances and that the determining factor of susceptibility to mental disorder, as well as of the course and event, may be expressed in a word as the mental reaction coefficient of the individual, together with its physical basis.

65. **Dementia Precox.**—The practical points in the diagnosis of this condition are the motor phenomena, such as tics, grimaces, impulsive movements, mannerisms, peculiarities of speech, etc. There is, the author thinks, a field that has not been fully investigated as yet in this line. One symptom noted by Kraepelin, but not emphasized by him, has been described by Dunton in a number of cases, that is, the mechanical irritability of the facial nerves which, when present and associated with mental aberration, is of diagnostic value. When the patient is tapped lightly with the percussion hammer over the cheek just in front of the ear, care being taken to exclude any visual impulse, there will be noticed a movement of the orbicularis palpebrarum varying in intensity from a marked contraction of the whole muscle, combined with other muscles, to a slight quiver of the inferior fibers. This phenomenon is quite different from that recently described by McCarthy, and Dunton hopes to investigate it more fully. The author specially points out the increase of the reflexes, which is common in this form of insanity and the tendency to sudden impulses, slow psychic reaction and silly purposeless resistance or negativism.

67. **Melancholia.**—Meyer reviews the cause of death in 36 cases of melancholia examined postmortem and calls attention particularly to a striking cell change mentioned by him in 1897 and which is practically the same as that described by Turner as characteristic of melancholia. In cases where this occurs the patients show resistance, rigidity, peculiar tetanoid attitudes of the extremities, frequent grimacing with the risus sardonicus, irregular twitchings and jactations appearing in exacerbations. The reflexes are generally exaggerated, rarely absent. There are no electric changes. The difficulty of coordination soon involves the deglutition and speech, and frequently diarrhea is noted with slight fluctuations of temperature. The mental condition is not easy to describe owing to the patient's condition, but he has been struck by the patient's ability to recognize the physician, even when hardly able to speak. While the symptom-complex may be of variable duration, occasionally only for a few days, followed by improvement with subsequent relapses, the end usually comes with bronchopneumonia or with death from infarction. The findings are much more extensive than Turner had supposed. Instead of being limited to the large cells of the cortex, they implicate many other large cell bodies, Clarke's columns, Deiter's

nucleus, the central nucleus of the medulla and the nuclei of Goll and Burdach and to a less extent the cell-bodies of the peripheral motor fibers and least the spinal ganglia and the cells of Purkinje. There is later a decay of myelin sheaths in the pyramidal tracts and in other parts; the neuroglia shows little reaction and the process is thus distinguished from what occurs in general paralysis and this difference is especially emphasized. He says this condition may occur in paresis, but the cases were not cases of paresis and the lesions were distinct. On the other hand, the presence of cholin in the cerebrospinal fluid was in harmony with the existence of myelin decay. He does not consider that the facts as a whole support Turner's theory of melancholia.

76. **Chondrodystrophy Fetalis.**—With a full report of a case of this disorder, Morse discusses the condition, pointing out that the pathologic processes consist in the disturbance of the normal process of ossification of the primary cartilage, probably early in fetal life and ceasing before birth. The microscopic appearances closely resemble that of rickets; microscopic examination, however, shows them to be markedly different; instead of enlargement of the ends of the long bones being due to abnormal epiphyseal cartilaginous displacement it is the result of periosteal overgrowth. The proliferating zone is narrower instead of wider, as is the case in rickets; the vascularity is not marked, and the changes in the skull are different in the two diseases. He sees no real relations between the condition and cretinism, and finds nothing clearly demonstrating its etiology. It may be due to some cause affecting the organism as a whole. The possibility of the infectious nature is mentioned. Usually the fetus dies *in utero* and the great majority of those born alive die within a few days after birth, still some cases may even reach adult age.

77. **Rheumatism in Children.**—The rheumatic child, says Crandall, should wear flannel at all seasons of the year, have special attention given to its exercise, not being too closely confined to the house at least in fair weather. For its diet we should restrict rather in the direction of sugar and starch; a plain but generous and nourishing diet containing some nitrogenous material is best. While milk is certainly the best diet in rheumatism, he has never seen injury follow the use of properly made broths, gruels, etc. Every case should be carefully studied by itself in this regard. As a prophylactic measure he insists on the proper care of the throat and the removal of adenoid growths and enlarged tonsils, which are perhaps the points of entrance for infection. He holds also that the salicylate of soda may have a prophylactic action in the prevention of outbreaks. It may destroy the dormant bacteria or toxins in the system. Whenever there is recurrence of rheumatic symptoms he would advise the use of salicylate of soda in three to six grain doses three times daily for one or two weeks each month for months at a time. The alkali treatment he thinks too depressing, and he has not succeeded in combining the two methods satisfactorily. We should carefully watch the stomach when using the alkalies. For the anemia he would begin the administration of iron at the earliest possible moment and a generous diet as soon as practicable. In acute cases every rheumatic joint should be protected by cotton wool or flannel bandage. Heat has been more acceptable, as a rule, than cold for the local treatment. Blisters should never be used in young children in the acute, or even in the subacute or chronic cases. He insists on absolute rest in bed in the rheumatic manifestations of children, lying between blankets instead of sheets and wearing a light flannel jacket. We can not always prevent cardiac disease, but by proper diet, hygienic management and perhaps in some cases by medication we may do something to prevent acute attacks of rheumatism.

78. **Enanthem.**—Forchheimer pleads for the use of the term enanthem as meaning specific eruptions of severe form on the mucous membranes. There are no objections to it, it being used by writers in other languages, and it is a word that saves the use of many words to express the same thing.

85. **Crossed Eyes.**—The cases of crossed eyes that can be treated successfully by glasses and stereoscopic training are, according to Colburn, those in which there are: "1. Clear media. 2. Typical development of the bony structures surrounding the eye. 3. Typical development of the orbital tissues. 4. Early correction of errors of refraction and the constant use of correcting glasses. 5. Systematic training of the muscles governing the movements of the eyes. 6. Co-operation of parents and attendants. In cases requiring operation for correction one or more of the following conditions may exist: In early life, atypic development of the muscles and check ligament or the bony walls of the orbits; paralysis, partial or complete, of one or more of the ocular muscles; shortening of one muscle and corresponding lengthening of its opposite from continued malposition; contracted connective tissue bands, the result of diseases or traumatism. As a secondary cause we may have corneal or lenticular opacities or disease of the fundus. In every case operative interference should be considered as the last resort. In my work I prefer the graduated or guarded tenotomy and advancement or shortening operation to the complete tenotomy."

86. **Typhoid Fever.**—After reporting a case of typhoid fever with very high temperature and recovery, Perekhan sums up as follows: "1. Relapses may occur in any variety or course of typhoid. 2. Relapses are to be attributed to the re-entrance into the circulation of living typhoid bacilli which, after the primary attack, were left behind in various organs. 3. No conclusion can be drawn as to the probability of the recurrence of relapse from the course or severity of the original attack. 4. Termination of the relapse by critical decline is relatively rare. 5. Hemorrhages and perforations are by far less common in relapses. 6. Relapses occur oftener in males than in females. 7. Prognosis in relapses is favorable. 8. Majority of relapses occur after an interval of five to eight days. This interval becomes twice as long between the first and second relapse. 9. Roseola in 65 per cent. of cases appears between the fourth and sixth days. 10. Constipation favors relapses."

90.—See abstract in THE JOURNAL, xxxviii, p. 1390.

97. **The Gastric Juice of Dogs in Therapeutics.**—From the results of Pawloff's experiments as reported by Bluhm, the latter concludes that the natural gastric juice of dogs as an ordinary therapeutic remedy, given one-fourth to one-half hour before meals, restores the appetite and improves nutrition. He thinks it would be valuable in the treatment of habitual drunkards and that its effects are not due to a psychic factor. It should not be diluted. Pawloff's technic for deriving the gastric juice from dogs is described and illustrated.

102. **Oophorectomy.**—Lindley reports observations on the effects of the removal of the ovaries in cases of epilepsy and insanity in which his experience on the whole has been discouraging, though he does not, however, reject the operation altogether. He quotes Drs. Brainard and McBride who are the highest authorities on the subject in southern California, that there is danger of damage from such operations. In normal persons where they have been removed he has not found it harmful in its effects. He would say in summing up that in selected cases of epilepsy and insanity where there is real disease of the ovaries, producing artificial menopause, it is advisable and justifiable, and in women having diseased ovaries the fear of producing mental or nervous conditions should not interfere with the decision to promptly operate. But the preferable operation is to remove the uterus and leave the ovaries. He says this may logically lead us to produce the menopause by removal of a section of the Fallopian tubes, but he is not sufficiently informed in regard to that operation to venture an opinion.

111. **Typhoid Fever.**—Sellers reviews a number of cases of complicating disorders in typhoid or during its convalescence, including among them gangrene, joint disease, aneurism, typhoid neuritis, bowel perforation, hemorrhage, parotitis, inflammation of the gall-bladder, liver abscess, laryngeal affections, disorders in the pleura, lungs, heart and stomach, complicating malaria, meningitis and appendicitis. He concludes that medical agents are of little or no value in the primary attack and treatment is only palliative, nor are they of value in either the complications or sequelæ of typhoid except to relieve the patient's mind. Whatever may be accomplished in

these cases will be done either by nature or by surgery. Typhoid bacilli, as a rule, are distributed through the tissues and may attack any part of the organism, but oftener when the patient is run down from some primary disease. The local disorder may get well in a short time or never, unless we assist nature. When the infection is due solely to typhoid bacilli with no complications the disease runs its course without much temperature elevation, but with mixed infection there will be more or less fever and there may be chills and sweats. The worst complications may occur in the mildest cases. In the worst cases we should feel much gratified if we escape them. On account of the long duration of the disease it offers a fertile field for any and all kinds of surgical diseases. The lower extremities are affected three or four times as often as is the case in all other parts of the body put together. Directly or indirectly the typhoid bacillus is responsible. It is no respecter of age, sex, rich or poor, but most cases seem to occur in the young.

114. **Saloquinin.**—Coile speaks a good word for this drug, which is the salicylic acid ester of quinin. He has found it on account of its tastelessness—which is due to its insolubility in the salivary secretion, and not the absence of bitter principles—a very convenient way of administering quinin to children and others. It probably possesses the tonic and antimalarial qualities of quinin as well as the antirheumatic action of salicylic acid and deserves a fair and impartial trial at the hands of the profession.

121. **Spinal Tuberculosis.**—The principles which Hunkin considers essential are: 1, rest to the weight-carrying function of the bone, which can best be obtained in the recumbent position and supine decubitus, and 2, that traction, alone or with counter-traction, is unnecessary and with disease in the lumbar, dorso-lumbar and cervical regions positively harmful except for the attendant immobilization. The best effects are produced by leverage on some such plan as the curved stretcher splint he employs. After the active stage has passed, the child can be up and out with the spine fixed and super-incumbent weight removed with proper apparatus, not always consisting of plaster-of-paris jackets with suspension sling, but varying with the location of the lesion. The apparatus are to be considered and used solely as levers that have the fulcrum between the two points of force; the important matter is that they should be light, easily handled and capable of giving rigid support. In the lumbar and dorso-lumbar regions efficient appliances are possible. In the lower dorsal it is better and in the mid-dorsal region imperative that suspension be discarded, and some plan of applying the corset or brace in the hyper-extended position be adopted. In the upper dorsal region, on account of the difficulty of getting sufficient leverage, the treatment is not yet satisfactory and he is still working out the problem for each individual case, keeping the child recumbent for a longer period, and later using some head support projected from some form of steel or plaster which is fixed on the trunk. In the cervical region many of the head-carriage apparatus are satisfactory and give good results.

122. **Pott's Disease.**—The obscurity of the symptoms is first noticed by Frisbie. It is not necessary that any prominence or knuckle should be present, and the location of the pain should be studied. It is more apt to be referred to the terminal distribution of the nerves. We should look for impairment of function, atrophy, deformity, attitude; the examination should be systematic and complete. The absence of temperature elevation does not exclude the disease.

127. **Post-Operative Adhesions.**—Barbat has experimented on animals for the purpose of ascertaining what methods will prevent post-operative adhesions. The operations consisted in transplantation of the ovaries, and in every case the parts operated on or rather one side was covered with a sheet of some one of the various materials experimented with. Gelatin was found too fragile: no better results followed chromicizing. Gold beater's skin dipped in melted gelatin and then formalin was easy to employ, but instead of preventing adhesions it, like all other foreign bodies, seemed to encourage them. He also tried in various operations where raw surfaces were left in the abdominal cavity, to prevent adhesions by filling the belly with sterile salt solution or olive oil, but with like unsatisfactory results. He finally tried the effect of massage, and has found it very satisfactory so far, and he hopes to be able some time to verify the condition as indicated by the clinical symptoms by examination of the abdomen in some cases.

132. **Antisepsis and Asepsis in General Practice.**—Marshall reviews the various unsanitary methods formerly in use, the carelessness in regard to the handling of surgical instruments, obstetric examinations, lack of disinfection and cleansing of fever thermometers, hypodermic syringes, catheters, tongue depressors, etc. He also speaks of a cause of dyspepsia not usually noted, consisting in the swallowing of discharges from a catarrhal condition of the nasopharynx, which he has seen mentioned but once. He thinks in some of these dyspepsias the treatment of the local nasal or pharyngeal condition would give the best results. In conclusion he says while he does not like to advocate a commercial coal tar preparation, he has found thermol of great value in 3 to 5 grain doses every three or four hours in typhoid fever.

137. **Tuberculosis.**—Williams reports a case treated by arc light. His apparatus, called the actinolyte, consists essentially of an enormous arc light, in which the carbons are set at right angles so as to save loss, and the light of which is concentrated by a series of large lenses, giving, when reduced to a small focus, a light approximated at seventy or eighty thousand candle-power. The heat is cut out by a water bath in which he has used methylene blue with the best results. The patient was a well-marked case of tuberculosis. The tuberculosis in the lung seemed to be cured by the treatment which was carried on for about two months, but the patient died subsequently of meningitis, whether of tuberculous origin or due to nasal catarrh or exposure to the sun can not be known as an autopsy was not procurable. He thinks, however, that the case shows the great hopefulness of this method of treatment, perhaps more than any other single method.

151.—See abstract in THE JOURNAL of July 19, p. 158.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures and single case reports are omitted unless of exceptional general interest.

The Lancet (London), August 23.

1 *Three Cases of Banti's Disease. James Barr.
2 Heart Disease in Children. A. E. Sansom.
3 Clinical Remarks on the Causes Which Prevent the Restoration of Normal Valve Function in Rheumatic Endocarditis. Richard Caton.
4 Seventy Cases of Inguinal Hernia Treated by the Kocher-Bassini Method. J. Lynn Thomas.
5 *On Some Cases of Operation for Chronic Non-Malignant Disease of the Stomach. Arthur E. Barker.
6 *Thirty Cases of Gastro-Enterostomy for Non-Malignant Affections of the Stomach. T. Kennedy Dalziel.
7 *Methods of Uniting Divided Intestine, with Special Reference to a New Bone Bobbin for That Purpose. E. Stanmore Bishop.

Journal of Tropical Medicine (London), August 15.

8 *Filariasis Amongst the Baganda. J. Howard Cook.
9 Beri-Beri at Diego Garcia. J. Bolton.
10 Climatic Buboes in Kusaie, Caroline Islands. C. F. Rife.

Australasian Medical Gazette (Sydney), July 21.

11 The Proteid Basis of Gout and Rheumatism. J. W. Springthorpe.
12 On Aims and Means in Medicine. R. Scot Skirving.
13 The Complete Mastoid Operation with Thiersch Grafting (Ballance). J. Lockhart Gibson.
14 Some Interesting Surgical Cases. W. J. Stewart McKay.
15 Some Methods and Results in Minor Surgery. C. S. Hawkes.
16 The Choice of an Anesthetic in the Adenoid Operation. Richard Arthur.

Intercolonial Medical Journal of Australasia (Melbourne), July 20.

17 Notes on One Hundred Cases of Stone in the Bladder. Frank C. Madden.
18 Diplopia, Following Herpes Zoster Ophthalmicus. James W. Barrett and W. F. Orr.
19 Albuminuria Following Severe Exercise in Healthy Persons. T. P. Dunhill and S. W. Patterson.

Presse Medicale (Paris), August 2 to 20.

20 (No. 62.) Les ravages de la variole dans l'Indo-Chine Française. E. Jeanselme.

21 (No. 63.) Recherches bactériologiques sur la perlèche. G. Bureau and Fortineau.
22 A propos du sporozoaire de la variole. A. Clerc.
23 (No. 64.) *Péritonite par perforation dans la fièvre typhoïde chez l'enfant (in children). H. Méry.
24 Emploi thérapeutique du pyramidon. P. Arsène Mesnard.
25 (No. 65.) *Traumatisms of the Scalp. R. Romme.—A propos des arrachements du cuir chevelu.
26 Toxicité de la substance rénale et néphrotoxines. J. Castaigne and F. Rathery.
27 L'intoxication saturnine chez l'enfant. R. Romme.
28 (No. 66.) Localisations rares de la maladie de Raynaud. Decloux and Ribadeau-Dumas.
29 Danger from Stools of Consumptives. Anglade and Chocreaux.—Les selles des tuberculeux ne sont pas moins dangereux que leurs crachats.
30 L'alcool et la resistance de l'organisme aux maladies. M. Labbé.
31 (No. 67.) Kephir from Goat's Milk. J. Dupaigne.—Le képhir de lait de chèvre.
32 Les injections intra-veineuses de sels mercuriels dans la syphilis. J. Dumont.

Semaine Medicale (Paris), August 13 and 20.

33 (No. 33.) Volvulus ileo-cæcal avec étranglement interne provoqué par une appendicite. Barth.
34 (No. 34.) *Néphrites primitivement unilatérales et lésions consecutives de l'autre rein. J. Castaigne and F. Rathery.

Jahrbuch f. Kinderheilkunde (Berlin), lv, June.

35 Zur Casuistik der Tumoren im 4 Ventrikel. H. Brüning.
36 Backhaus' Milk in Infant Feeding. C. Hartung.—Backhaus' Kindermilch.
37 Joint Affections in Scarlet Fever. F. von Szontagh.—Zur Kenntniss der scarlatinösen Gelenkentzündungen.

July.

38 Ueber Phosphaturie. F. Soeheer.
39 Unilateral Defects in the Thoracic Wall and Corresponding Arm. J. Schoedel.—Einseitige Bildungsfehler der Brustwandung.
40 Measurement of Amount of Food in Artificial Infant Feeding. M. Adam.—Nahrungsmengen künstlich ernährter Kinder nebst einem neuen Vorschlag zur Nahrungsmengenberechnung.
41 Ueber acute Osteomyelitis im Kindesalter, mit Berücksichtigung der Endresultate; 32 Fälle. R. Gonser (Basle).
42 *Study of a Breast Nursling. Nordheim.—Beobachtungen an einem natürlich ernährten Kinde.

Jahrbuecher f. Psychiatrie (Vienna), xxi.

43 Alterations in Motor Portions of Spinal Cord After Resection of Peripheral Nerves. E. Straussler.—Ueber Veränderungen der motorischen Rückenmarksstellen nach Resection und Ausreisung peripherer Nerven.
44 Ueber Migräne-Psychosen. R. von Krafft-Ebing.
45 *Critik der sogennanten traumatischen Syringomyelie. R. Klenböck.
46 Study of a Cerebellar Tumor. M. Probst.—Ueber die klin. und anat. Ergebnisse eines Kleinhirntumors.

Klinisch-Therapeutische Wochenschrift (Vienna), ix, July.

47 (Nos. 27 and 28.) *Suture of the Heart. H. M. Sherman.—Ueber Herznaht.
48 Application and Curative Results of Mineral Mud at Home.—L. Hram.—Ueber Anwendung und Heilerfolge von Hauskuren mit künstlich erhitzten Pistyaner Schlamm.
49 Report of Committee on Prophylaxis of Tuberculosis.
50 (No. 30.) Anesthesia for Operations on Penis. J. Sellei.—Ueber anesthesirende Verfahren bei Penisoperationen mit bes. Berücksichtigung der Oberst'schen Methode.

Muenchener Med. Wochenschrift, July 20.

51 Ueber Stenose bei Amyloiddegeneration im Larynx. W. Courvoisier.
52 Ueber die Autolyse des puerp. Uterus. L. Langstein and O. Neubauer.
53 *Zur Frage der Händedesinfection. C. Lauenstein.
54 *Die Modification der subcutanen Arseniktherapie nach Ziemssen Speth. Lesionek.
55 *Gastric Ulcer. Ageron.—Diagnostisch-therap. Bemerkungen zum Magengeschwür.
56 *Die spinalen Reflexe in der Hysterie. Steiner.
57 Postmortem Findings in Injuries of the Thoracic Organs. Wetzel.—Ueber Verletzungen der Brust, speziell des Herzens.
58 Zur klinischen Bedeutung der Retroflexio uteri mobilis. A. Theilhaber.
59 When Did Aretæus of Cappadocia Live? R. Kossmann.—Wann lebte A. von C.?

August 5.

60 Extirpation of Lachrymal Sac in Case of Stenosis as a Means to Prevent Future Septic Infection of the Eye, Especially in Industrial Accidents. T. Axenfeld.—Die Prophylaxe der septischen Infektion des Auges.
61 Three Cases of Rumination in One Family. L. R. Müller.—Eine Wiederkäuerfamilie.
62 Advantages of Vaginal Operation for Ectopic Pregnancy. A. Rieck.—Zur Behandlung der Extrauterinschwangerschaft.
63 Negative Experimental Tests of Collargol. R. Trommsdorff.—Collargol.
64 *Zur Aetiologie des Eczems. Heubel.
65 Menabea venenata. A. Model.
66 Industrial Legislation and Otology. O. Korner.—Soziale Gesetzgebung und Ohrenheilkunde.
67 Historical Sketch of Certain Obstetric Maneuvers. G. Klein.—Zur Geschichte der Extraktion und Expression des nachfolgenden Kopfes.

Wiener Klinische Rundschau, xvi.

68 (Nos. 17 to 19.) Injuries of Liver. E. Fuchsig.—Zur Casuistik der Leberverletzungen.
69 Fall von traumatischem Scharlach (scarlet fever). T. Lippmann.
70 Die Crisis des Darwinismus. M. Kassowitz.
71 Morbid Dread of Blushing. L. Haskovec.—Erœuthophobie.
72 Water Cures, Physicians and Charlatans. Sarason.—Wassercuren und Aerztestand unter Berücksichtigung des Curpfuscherthums.
73 (No. 27.) 4 Fälle von Ileus. Chlumsky.
74 (No. 28.) Ueber eine wahrscheinlich als Recurrens zu deutende Erkrankung, nebst Bemerkungen über abortiven Typhus. Hodlmöser. (Concluded from preceding number.)
75 (No. 29.) *Action of Repeated Injections of Suprarenal Extract. F. Samberger.—Ueber die Wirkung wiederholter Injectionen von Nebennierenextract.
76 Die Indicationen für die Operative und Apparatbehandlung in der Orthopädie. M. Haudek. (Concluded from No. 27.)
77 *History of the Pulse in Medicine. S. Zervos.—Zur Lehre von der Sphygmologie.
78 (No. 30.) *The Foot Clonus After Recovery from Cerebral Hemorrhage. Von Fragstein.—Ueber das Fuss- und die ihm verwandten Phänomene nach in Heilung übergangenen cerebralen Hämorrhagien.
79 Tropon-Cacao. J. Winterberg.

Wiener Klin. Wochenschrift, July 17 to 31.

80 (No. 29.) Photograph Paper for Light Tests. J. M. Eder.—Verwendung gelbempfindlicher photographischer Papiere zur photometrischen Bestimmung der Helligkeit von Arbeitsplätzen.
81 *Pancreasdiabetes und Icterus gravis. H. Teleky.
82 Antibodies. A. Klein.—Zur Frage der Antikörperbildung.
83 Technic of Leucocyte Counting. W. Türk.—Ueber Leukocytenzählung. (Concluded from No. 28.)
84 (No. 30.) *Study of Etiology of Alimentary Glycosuria. W. Schlesinger.—Ueber einige ursächliche Bedingungen für das Zustandekommen der alimentären Glycosurie.
85 Zur Frage der Pigmentbildung aus Tyrosin. M. Oppenheim.
86 Distomum hepaticum beim Menschen. E. Duffek.
87 (No. 31.) Adrenalin in der urologischen Praxis. A. von Frisch.
88 Cerebral Bladder Disturbances and Diagnosis of Tumors in the Corpus Callosum. E. von Czyhlarz.—Zur Frage der cerebraler Blasenstorungen, zugleich ein Beitrag zur Diagnostik der Balkengeschwülste.
89 *Yeast in Therapeutics. H. Paschkis.—Die Hefe als Arzneimittel.
90 Disturbances in Musical Audition. F. Alt.—Ueber Störungen des musikalischen Gehörs. (Concluded from No. 30.)
91 Ueber die Reaction des Prostatasecretes bei chron. Prostatitis. H. Lohnstein.

Zeitschrift f. Orthop. Chirurgie (Stuttgart), x, 3.

92 Zur Statistik der Deformitäten. L. Rosenfeld (Nuremberg).
93 Relations between Physiologic Torsion of Spine and Lateral Curvature. W. Schulthess (Zurich).—Ueber die Lehre des Zusammenhanges der phys. Torsion der Wirbelsäule mit lateraler Biegung und ihre Beziehungen zur Skoliose unter Berücksichtigung der Lovett'schen Experimente.
94 Die Zuppinger'sche Skoliosentheorie. Ibid.
95 Congenital Upward Displacement of Patella. Biencke.—Beitrag zur so-gen. "congenitalen Verrenkung der Kniescheibe nach oben."
96 Beitrag zur Lehre von der seitlichen Deviation der Fingerphalangen. M. Karch.

Koch's Zeitschrift f. Hyg. u. Infekt. (Berlin), xl.

97 (No. 1.) Agglutination in Mixed Infection. A. Castellani.—Die Agglutination bei gemischter Infektion und die Diagnose der letzteren.
98 Effect of Grape Sugar on the Staph. pyog. H. Kayser.—Die Einwirkung des Traubenzuckers auf den verschiedenen Lebenszustanden des Staph. pyog.
99 Bacteriologic Examination of Nose. B. O. Neumann.—Bact. Nasenuntersuchungen.
100 Ueber die Agglutination der Pneumokokken und über die Theorien der Aggl. F. Neufeld.
101 Ueber Gas-Phlegmone und Schaum-Organe und deren Erreger. E. Fraenkel.
102 Destruction of Anthrax Bacilli in Normal Lung. J. J. Snel.—Der Untergang von Milzbrandbacillen in der normalen Lunge.
103 Steam Disinfection of Animal Hair. Proskauer.—Zur Desinfection von Thierhaaren mittels Wasserdampfen.
104 Test Tuberculin Injections in the Army. Klimowitz.—Die Probe-Tuberculininjectionen zur Abwehr der Tuberculose in der Armee.
105 Untersuchungen über der Agglutination. P. Eisenberg.
106 (No. 2.) *Untersuchungen über den Mechanismus der Agglutination. A. Joos.
107 *Ueber die tetanusgiftneutralisirende Eigenschaft des Gehirnes. E. Marx.
108 Prophylaxis of Plague. Tavel and Others.—Ueber Pestschützmaassregeln.
109 Ueber einen neuen Bacillus aus der Gruppe der Influenzabac. G. Frank.
110 Action of Ethyl Alcohol on Micro-organisms. G. Wirgin.—Zur Wirkung des Ethylalkohols auf Mikroorg.
111 Agglutinins of Urine. W. W. Ford.—Beitrag zur Lehre von den Harnagglutininen.

Revista di Patologia nerv. e ment. (Florence), vii.

112 (No. 6.) *Anomalia del cervelletto (cerebellum); prima osservazione di scisslone in due lobi del processus vermiformis. D. della Rovere.
113 *L'ablazione completa dell' apparecchio tiro-paratiroideo nel cani (thyroid-parathyroid apparatus in dogs). G. Coronedi.
114 *Contributo alla patogenesi del gozzo esoftalmico (exophthalmic goiter). E. Tedeschi.
115 (No. 7.) *Studi sull'anatomia patologica e la patogenesi delle psicosi acute confusionali. Camia.

1. **Banti's Disease.**—After reporting three cases and calling attention to their special features, Barr remarks that his view of Banti's disease is that it is probably due to a vasomotor paresis of the splanchnic area, either in whole or in part, and that this paresis arises from disease of the visceral sympathetic ganglia. As a consequence there is great engorgement of the abdominal viscera, especially of the spleen and liver and increased hemolysis, with consequent oligochromemia and oligocythemia. The increased blood supply to these organs leads to fibrosis and lessened function. The peritoneal effusion when it takes place seems to be due to the vascularity rather than to portal obstruction. The paresis leads to retention of blood in the portal area, with lessened supply to the rest of the body, fall in the general blood-pressure with lessened work for the heart, impairment of nutrition and muscular atrophy. The digestion is usually impaired and there is apt to be an increase of toxins in the intestinal tract with further aggravation of the mischief. The engorgement of the viscera and mucous membrane generally is a frequent source of hemorrhage. As regards splenectomy he says it may be an excellent treatment for the disease as has been recommended, but we have to treat the patient rather than the disease. It might start up leukemia in some cases, as difficult to treat as the disease itself. We must try to assist the spleen and to increase the leucocytes and get beyond this organ and reach the nerves and ganglia which supply the other viscera. We must try to raise the general blood-pressure, improve nutrition and keep the intestinal tract as aseptic as possible. For this purpose he prescribes salol, benzo-naphthol and occasionally a saline purge, and to raise the blood-pressure and affect the nerves he gives strychnin, digitalis, quinin and caffein. He thinks perchlorid of iron with chlorid of calcium is a good hematinic and vascular tonic; it also lessens the liability to hemorrhage. *A priori* he would not expect benefit from arsenic and in his first two cases he is trying suprarenal capsule. In the early stage the patient should be kept in bed and a large elastic abdominal belt firmly applied would probably do good. The diet should be light, simple and easily digestible. As there is not so much obstruction to the portal circulation as in an ordinary case of cirrhosis, there is not the same necessity for limiting the quantity of fluids drunk. He finds the following prescription a good method of introducing chlorid of calcium into the system: Take about an ounce of gelatin, the juice of one lemon, from two to four drams of chlorid of calcium and one pint of hot water. Dissolve the gelatin, etc., allow to set, and it is then ready for use. He prefers in the majority of cases drainage in preference to epiplopexy as suggested by Murrell and believes that for cases curable by epiplopexy the simpler means are just as effective.

5. **Pyloric Obstruction.**—Barker tabulates ten cases of pyloric obstruction or gastroduodenal ulcer treated by operation and discusses the conditions. All the cases had had careful medical treatment before surgical interference was suggested. In all the cases the operation was the retrocolic variety (v. Hacker), suturing the serous and mucous coats below the proposed opening and then opening the gut and stomach, uniting the resulting edges and finishing the continuous suture over the front which had been begun before the viscera had been opened. The abdominal wound was closed in every case except one by sutures, including all the layers with the skin. In the cases in which the buried sutures were used in addition to the skin sutures, the wound gaped on the tenth day after the skin sutures had been removed. The lymph was scraped off the edges of the wound and the edges wiped and the whole thickness of the abdominal wall sutured in one suture, the old buried suture removed at the same time, and the wound healed as thoroughly as if by first intention. All his patients were fed from the first by the mouth as well as by the rectum and the patients were allowed to keep in a semi-recumbent position while awake and were laid on their right side for sleep or change of position. He thinks there is advantage in this as it increases the capacity of the chest by the sinking down of the abdominal viscera and thus wards off to some extent lung trouble. In nearly every case he introduced a rubber tube into the stomach during the first twenty-four hours to relieve the organ of bile, mucus and blood and in all cases the relief was striking.

6. **Gastroenterostomy for Non-Malignant Gastric Disease.**—Dalziel reports the general results in thirty cases, only one of which was fatal, and describes his method. In the fatal case the death was probably due to complications, a very large ulcer destroying the stomach wall and exposing the pancreas.

7. **Intestinal Anastomosis.**—In order to obtain the best results from any bobbin for intestinal anastomosis it should possess the following qualities. It should be as Bishop says: 1. Easy of introduction; 2, perfectly simple and require no elaborate technic; 3, it should be resistant and absorbable; 4, it should be so made that the purse-string sutures which encircle the ends of the gut should, as they are tightened, approximate these ends by the mere act of tightening; 5, when in position it should present the folds of intestine which have to be united by a second line of suture in such a way as to facilitate that suturing; 6, it should be of such a size and shape as to protect the line of suture during the period of plastic union. He has tested the various bone bobbins that have been devised and finds that none of them combine all these advantages, and offers his own. He illustrates three forms respectively for enterectomy, gastroenterostomy-ileocolostomy and pylorectomy. The metal button has the advantage of rapidity of operation and can not entirely be superseded, but should not be used unless the element of time is of most importance.

8. **Filaria Perstans.**—The filariasis of Uganda has been studied by Cook, who finds that a high proportion of the Baganda living in the immediate neighborhood of the capitol harbor the embryos of the parasite Filaria perstans in their blood. The different classes of natives show varying infection-rates; the peasant class were most affected, 54 per cent., then the sick in the hospital, 48 per cent., and those who lived in the best hygienic surroundings fared best, the chiefs and Europeans' servants, 36 per cent. Some cases occur with absolutely no further symptoms of disease, and are frequently a great danger to the uninfected population from the increased difficulty of segregation of filariated individuals. The majority of cases, however, are accompanied by some at least of the earlier symptoms of sleeping sickness, and hence a connection between the two conditions is highly probable. A very high proportion of cases of sleeping sickness, if examined at the right stage, readily show the filaria in the peripheral blood stream—32 cases out of 34 examined in the Mengo hospital. Although Cook has not found that the severity of somnolence depends on the number of Filaria perstans in the blood, he thinks, as a rule, the number and severity of the earlier symptoms do vary with the number of embryos in the blood. Some other factor in addition to the presence of filaria in the blood is required to aid the diffusion both of filariasis and of sleeping sickness, otherwise the hospital in which cases both of filariasis and occasionally sleeping sickness have been introduced ought to act as a center of infection, which is not the case. Experiments ought to be carried out to determine what this factor is, that is, testing the various blood-sucking insects on filariated individuals, and determining, if possible, if they cause diffusion of filariasis and, if possible, determining how filariasis oversteps the boundary line that borders on the established disease of sleeping sickness.

23. **Peritonitis from Perforation in Typhoid Fever in Children.**—Méry recently operated on a child who presented symptoms of peritonitis the fifteenth day of an apparently mild case of typhoid fever. The perforation was found and sutured and the child recuperated, but succumbed twelve days later to broncho-pneumonia. The peritonitis was diffuse at the time of the intervention, but the autopsy disclosed that the inflammation had mostly subsided. The laparotomy was not decided upon until the twenty-first hour. If it had been done earlier, before the peritonitis had become so extensive, the child might have been saved. Chevalier has recently saved two out of three patients operated on promptly under these circumstances.

Méry believes that perforation is more frequent in typhoid fever in children than is generally supposed. He knows of 12 instances in the Paris hospitals in the last six years. Most of the children were over 10 years old, but a case has been reported in an infant of 11 months. Intestinal hemorrhage seems to predispose to perforation. It usually occurs in the last 60 cm. of the small intestine. In one case in his experience the child died in a relapse from a perforation at the sigmoid flexure. The ulcerations extended throughout the large intestine. Five recovered out of 13 children operated on. Méry believes in the necessity for operating even when the diagnosis of perforation is not fully decided. He makes a practice of obtaining, if possible, the consent of the parents to a surgical intervention whenever a child with typhoid fever is admitted, explaining the extreme rarity of the necessity for it and its urgency when it is required. A few cases are on record of perforating typhoid appendicitis in children.

25. **Traumatisms of the Scalp.**—Romme states that in 34 out of 35 cases in his experience the injury was due to carelessness of workwomen who allowed their heads to come too close to the machines. They are heedless and play with the machines, or do up their hair and as they toss it back it is caught in the machinery. Strange to say the pain and the hemorrhage are slight. The scalp is torn out so quickly that the nerves are broken instantaneously and the sensation is past before the subject has had time to realize it. If the flap is still connected it should be replaced, but attempts to replace a completely severed flap have never succeeded in his experience. Everything about the flap favors suppuration, notwithstanding minute care to ensure asepsis. The defect must be covered by Thiersch flaps and he has found the officinal Styrax unguent remarkably effective as a disinfectant and stimulant for the tissues in these cases. It must be applied without loss of time after the first antiseptic rinsings and prepares the soil for receiving the grafts, insuring asepsis and sufficient vitality. Scalp wounds under modern treatment have a mortality of only 8.5 per cent.

34. **Study of Unilateral Nephritis and Consecutive Lesions of Other Kidney.**—Castaigne and Rathery have been making a systematic study of the kidneys of persons dying from infectious or toxic affections and also in animals injected with microbes, toxins or poisons. They became convinced that unilateral nephritis is extremely rare. It may occur as an ascending affection, but is exceptional when of hematogenic origin. They never found an instance of acute or subacute nephritis due to poisons or toxins, limited to one kidney. They are imperative in proclaiming the necessity of surgical intervention in case of unilateral, extensive and deep nephritis. If the other kidney is functioning normally and the subject is not too much intoxicated, and if the injured kidney is not too much compromised, nephrotomy may prove sufficient. The patient may require a secondary nephrectomy or the kidney may have to be removed at once. When certain that the other kidney is normal there is nothing to be gained by leaving a stump of a kidney. The absorption of epithelial detritus and toxins from it will terminate in the profound injury of the other kidney in time, as their research established beyond a doubt.

42. **Study of a Breast Nursling.**—Nordheim tabulates the results of careful study of his own second child thriving on mother's milk. He was weighed 1500 times in the course of 100 days. The milk dried up the eleventh week. He does not know of any similar study of a normal breast nursling in literature.

45. **Traumatic Syringomyelia.**—Kienböck cites ten pages of bibliography which he says he has read in the original trying in vain to find a single reliable case on record of traumatic syringomyelia.

47. **Suture of Heart Wounds.**—This is the oration on surgery delivered at the Saratoga meeting of the American Medical Association and published in THE JOURNAL of June 14.

53. **Disinfection of the Hands.**—Lauenstein never uses the brush until after he has thoroughly cleaned his hands, instead of in the beginning. He remarks that practical experience is constantly confirming the value of alcohol in disinfection of the hands, regardless of what theorists may say. One advantage is that it reveals even the tiniest scratch by setting up smarting. Tests with colored alcohol showed that it penetrates even to the outlets of the sweat and sebaceous glands when the hands are wet. It is most effective the stronger the concentration. He always shampoos his head before an important operation, and recommends masks for those who perspire freely, and mouth screens when there has to be talking, otherwise not. He also advises opening up a joint to the eye rather than attempting to explore it with the finger.

54. **Formulae and Technic of Subcutaneous Arsenic Medication.**—The results obtained by subcutaneous injection of arsenic have been extremely satisfactory even in lichen ruber and dermatitis herpetiformis, usually so rebellious. The amount of arsenic injected is minute in comparison with the quantities usually given by the mouth. Pills containing arsenic are frequently found intact in the feces of persons taking it internally. This explains the superior results obtained by subcutaneous injection. No toxic by-effects were noted in any of the more than 1000 injections made at Posselt's clinic at Munich whence this communication proceeds. The digestion and nervous system never showed signs of disturbance and not a single instance of idiosyncrasy was encountered. In four cases of psoriasis or eczema, however, an atypical, abortive zoster was observed, in three during the arsenic treatment and in one afterward, which might possibly have had some connection with the medication. The formula used is recommended as peculiarly adapted for subcutaneous injection for various reasons and a great improvement on the solutions hitherto in vogue. Ziemssen's formula was to boil 1 gm. acidum arsenicum with 5 c.c. standard solution of soda until dissolved; dilute to 100 gm. and filter. Sterilize in 2 c.c. vials, ready for use. Speth reduces by one-half the amount of the soda solution. On the addition of alcohol a precipitate is thrown down in the form of a fine powder, which is then used as above; 100 c.c. of the finished solution correspond to 1 gm. of the arsenious acid.

55. **Diagnosis and Treatment of Gastric Ulcer.**—Ageron deplores the harm that results from the careless diagnosis of "nervous dyspepsia" when in fact an ulcer is the cause of the trouble. He has known of two cases, one a young girl and the other a woman in the thirties, who both died suddenly from gastric hemorrhage in the course of what was supposed to be nervous dyspepsia, but proved to be an ulcer in an unusual location in the stomach. He states that in 5 out of 35 cases of gastric ulcer in his experience there was complete absence of hydrochloric acid. In another there was besides the total anacidity, complete lack of enzymes; the operation disclosed an old ulcer. Lenhartz has described a similar case. Ageron proclaims that the difference between an anatomic and a physiologic dilatation of the stomach is that in the latter the motor functional capacity is only diminished, while in the former the interval before the contents of the stomach are expelled is so far beyond the physiologic limit that at no time is there complete evacuation of the organ. The general assumption that an ulcer does not interfere with the motor function unless there is stenosis and ectasia, has been refuted by his experience. In many cases the ulcer is situated in the lesser curvature or in the posterior wall and does not entail stenosis, and yet the motor disturbances are nearly as pronounced as with the latter. He diagnoses such cases, notwithstanding the lack of characteristic objective symptoms, by repeated exploratory lavage of the stomach and recommends this practice urgently as a means of differentiating an otherwise undiscoverable ulcer from nervous dyspepsia. Boas defines ectasia as the presence of stagnating remains of food with sarcinæ in the fasting stomach. Ageron is still more decided and claims that the stomach can not be considered anatomically intact when repeated test lavage of the organ, in cases suspicious of ulcer, reveals that one of the test breakfasts in common use remains

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longer than two hours in the stomach, usually accompanied by simultaneous increase in the amount of fluids in the stomach. Or when considerable remains of a larger meal of meat, bread and vegetables are found in the stomach eight or nine hours afterwards. There is no other gastric affection in which such delay in the evacuation occurs constantly. The fluid food given to an ulcer patient stretches the stomach and drags it down. For this reason such patients should be kept in the dorsal decubitus or lying partially on the right side, with the pelvis elevated. This relieves the greater curvature, aids in the evacuation of the stomach and enables the food to be assimilated more rapidly, frequently fattening the patients. The enlargement of the uterus in pregnancy lifts up the greater curvature of the stomach in the same way, as if on a cushion, and thus mechanically relieves persons who have ulcers or ptosis of the viscera. After parturition the old symptoms return. He treats chronic ulcers by introducing into the stomach, after preliminary rinsing with a tepid boric acid solution, 200 gm. of linseed or poppy-seed oil containing 10 gm. of subgallate of bismuth (dermatol). This reduces the pain and improves the motor function. The oil alone is not so effective. It is indicated in all cases of not too advanced stenosis and without extreme, sack-shaped enlargement in which the oil might accumulate and fail to reach the ulcer.

56. **Spinal Reflexes in Hysteria.**—Steiner reports a case of uncomplicated traumatic hysteria which he has had under observation for years, in which the skin reflexes, the scrotum reflex in particular, is intact while the knee-jerk has disappeared. This is contrary to the text-books.

64. **Etiology of Eczema.**—Two children in one family became affected with extensive eczema. They were fed almost exclusively on milk from a single cow. On suspension of this milk the eczema rapidly healed. On resumption of the milk later it did not return. Investigation showed that at the time of the skin affection a large quantity of salt had been given the cow. When salt was again fed to the cow the eczema returned again, vanishing once more as the salt was discontinued. The eczema recurred later on one of the children when milk from a neighbor was purchased and again it was traced to an unusual amount of salt given the cows, and vanished on its suspension. No treatment was instituted at either time.

75. **Action of Repeated Injection of Suprarenal Extract.**—Samberger reports the results of a series of experiments on dogs repeatedly injected in a vein with about 5 c.c. of a 5 or 10 per cent. suprarenal extract. The aim was to approximately imitate the natural production of the suprarenal secretion and its influx into the circulation. The immediate effect after each injection was a remarkable pallor of all the visible mucosæ, maximal dilation of the pupils with loss of the reaction to light: the saliva streamed from the mouth and the temperature rose nearly a degree in three hours. Sugar appeared in the urine, but vanished again in twenty-four hours. The proportion sometimes amounted to 1.8 by the polarimeter. Exophthalmus was occasionally noticed. The respiration acquired something of the Cheyne-Stokes type. The gait became atactic and there was vomiting and incontinence of urine and spermatorrhea. The pulse was either much retarded or much accelerated. The secondary effect of the injections was a loss of appetite and weight, constipation or diarrhea and hypertrophy of the left ventricle. Some of the dogs succumbed after 8 c.c. of a 10 per cent. extract while others took 50 c.c. without disturbance beyond the symptoms mentioned above. After subcutaneous injection of the extract, edema and necrosis of the muscles developed at the spot and the animals suffered from apparently intense pruritus. In one instance severe hematuria followed a single subcutaneous injection. The animals became accustomed to the injections, the symptoms becoming comparatively attenuated after the first injection.

77. **History of the Pulse in Medicine.**—Zervos writes from Athens that Hippocrates was the first to note and describe the pulse, but Herophilus of Chalcedonia was the first to count it systematically. He lived about 300 B. C. and used a water clock for the pulse count. Galen's work on sphygmology is the best that has come down to us from antiquity. It is dated about 200 A. D.

78. **The Foot Clonus in Recovery from Cerebral Hemorrhage.**—Fragstein has had occasion to observe nine cases of men between 35 and 43, all with a history of syphilitic infection five to eight years before hemiplegia developed. The hemiplegia had passed away in all cases, the functions of the limbs were apparently normal in every respect, yet the foot clonus described by Westphal as a sign of cerebral hemorrhage or other lesion, still persisted unattenuated. The center that presided over the function was apparently restored to normal, but the function of the inhibiting center was evidently still deranged.

81. **Pancreas Diabetes and Icterus Gravis.**—Teleky has observed two cases of an affection in men of 50 which commenced with melliturla impossible to banish completely even on a strict diabetic diet. Icterus developed a few weeks afterward and on its appearance the sugar vanished permanently from the urine. The fat ingested was not utilized in the system to the normal amount and in both cases the icterus persisted until death which followed after a few months of progressive symptoms of chronic pancreatitis. In both the autopsy showed that the pancreas was the seat of profound pathologic alterations while the other organs were almost completely normal. In both cases the cause of the severe icterus was evident in the compression of the choledochus by the enlarged pancreas. The cases suggest that in future when icterus is observed accompanying or subsequent to melliturla, and the stools contain undigested fat, the possibility of pancreatitis should be borne in mind. If the icterus persists and is not accompanied by symptoms indicating gallstones, the icterus can be attributed to compression of the choledochus by the inflamed pancreas. If the icterus can be controlled by a choledocho- or cholecysto-enterostomy, the life of the patient may be prolonged. Surgical intervention should be early in such cases, without wasting time on useless medical measures.

84. **Etiology of Alimentary Glycosuria.**—Schlesinger describes experimental research which has established among other facts that alimentary glycosuria after ingestion of dextrose occurs exclusively by way of rapid absorption through the thoracic duct. His clinical and experimental experience further indicates that any injury of the liver has a tendency to induce alimentary glycosuria. The disturbance is not very pronounced so far as levulose and starches are concerned, and a second, re-enforcing factor must intervene before diabetes results. This factor may be what Naunyn calls congenital weakness of sugar metabolism, a hereditary tendency. It is also possible that an affection of some other organ, superposed on the first, may be sufficient to induce the diabetes which neither alone could accomplish. Naunyn is probably correct in the assumption that very pronounced alimentary glycosuria is suspicious of diabetes. Schlesinger found that dextrose was eliminated after ingestion of levulose in 2 cases of acromegaly, whose relationship to diabetes is generally recognized. The patients were free from sugar on ordinary diet, but on ingestion of 100 gm. dextrose their urine contained a large proportion of sugar, and after ingestion of levulose, first this sugar and then dextrose. His work emphasizes the importance of the absorption in the thoracic duct and of any disturbance in the liver function as factors in the etiology of diabetes.

89. **Yeast in Therapeutics.**—Paschkis has used yeast in about 20 cases of furunculosis, acne or severe folliculitis, and found that its therapeutic action was remarkably effective in some of the cases while others proved refractory. Brocq claims that it is as much of a specific in furunculosis as quinin in malaria or mercury in syphilis. There are no inconveniences from its use except that possibly if much sugar is being taken at the same time, the fermentation set up might induce considerable flatulency.

100. **Mechanism of Agglutination.**—Joos believes that he has finally established that agglutination is a chemical reaction, and that a true combination results which terminates in the formation of a new substance. Agglutination is the

result of the combination of three substances, two of which are specific and the third is merely a minute quantity of some salt. The intensity of the reaction is determined by the particular salt present. The combination of the specific agglutinator with the agglutinatable substance produces the combination, but it is invisible to the eye or microscope and the bacilli remain alive, free and motile, until the salt is added. This causes precipitation at once, the salt entering into the combination. The properties of the new substance thus formed differ from those of its constituents. The trifle of salt needed may be supplied by the bodies of the bacteria. The phenomenon of agglutination, on the whole, he concludes, is very much like that of the production of a double salt.

107. **Neutralizing Property of Brain Tissue in Regard to Tetanus Toxin.**—In the experiments related the effect on the tetanus toxin *in vitro* of an emulsion of the brains of guinea-pigs proved to be identical with the action of antitoxin. This justifies the assumption that the action of guinea-pigs' brains and of antitoxin is essentially equivalent in this respect.

112. **Cerebellar Anomalies.**—Della Rovere and De Vecchi report a case of hitherto undescribed anomaly of the cerebellum consisting in separation of the posterior vermis by exaggeration of the curve between the superior and inferior portions and resulting in an anomaly of a body resembling a minute cerebellum resting on the after portion of the medulla.

113. **Functions of the Thyroid.**—Coronedi and Marchetti report experiments on dogs in which they had removed the thyroid and parathyroid bodies. They fed them with iodin and bromin preparations in fatty excipients with the result of relieving the strumapriva symptoms to a greater or less extent. Without formulating conclusions they remark that the salutary effect of halogens thus administered in animals after removal of the thyroid and parathyroid bodies indicates that there is some special action of these substances that render them a substitution to a certain extent of the thyro-parathyroid tissues, and that the experiments contribute valuable aid to our knowledge of the physiologic effects of bromin and iodin in the thyro-parathyroid apparatus.

114. **Exophthalmic Goiter.**—Tedeschi alludes to his former contribution abstracted in THE JOURNAL, vol. xxxviii, p. 1187, and reports additional experiments from which he deduces the following conclusions: 1. In animals, a lesion of the restiform bodies, especially the anterior portion, evidently causes the Basedowan syndrome. 2. In animals thus affected, but in which the symptoms have diminished or disappeared, it is possible to reawaken them in whole or in part by producing in them hyperthyroidization. 3. In animals in whom the thyroid apparatus has been removed almost totally the section of the restiform bodies does not cause the Basedowan symptoms. 4. In animals in whom the Basedowan symptoms have just been produced by loss of the restiform bodies, the removal of the thyroid gland diminishes or completely banishes the greater part or all of the symptoms.

115. **Acute Confusional Insanity.**—Camia has studied his personal observations and cases from the literature as regards the pathologic findings in acute confusional insanity. He finds the pathologic anatomy does not clear up the pathogenesis in many of the cases. Among the factors that cause acute confusional psychoses there is only one that seems to be common to the majority, perhaps to all. This consists in a special slight alteration of the organic chemism (changes in chromatin, etc.) which may depend on causes of various nature.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 21 to 27, 1902, inclusive:

Henry L. Brown, contract surgeon, detailed a member of an examining board at Fort Sheridan, Ill., vice Contract Surgeon Charles F. Smith, relieved.

Alpha M. Chase, contract surgeon, now at Fort Assiniboine, Mont., to report for duty at Fort Reno, Okla.

William M. Gray, major and surgeon, U. S. A., on being relieved from duty at Fort Thomas, Ky., to report for duty at Fort McPherson, Ga.

Gustavus I. Hogue, contract surgeon, now at San Francisco, to report for assignment in the Department of California.

Harry C. Marcy, contract surgeon, now under orders to accompany troops to Fort Slocum, N. Y., will, on his arrival at that post, proceed to Fort Riley, Kan., for duty.

Lewis B. Porter, contract surgeon, now at San Francisco, to report for assignment in the Department of California.

Harry S. Purnell, lieutenant and asst.-surgeon, U. S. A., detailed a member of an examining board at Columbus Barracks, Ohio, vice Major Guy L. Edie, surgeon, U. S. A., relieved.

Edward Sears, contract surgeon, now at Fort Niobrara, Neb., is assigned to duty at that post.

John M. Shepherd, contract surgeon, leave of absence extended one month.

Allen M. Smith, captain and asst.-surgeon, U. S. A., leave of absence for fifteen days granted, to take effect about Sept. 1, 1902.

Edwin P. Tignor, contract surgeon, leave of absence from the Department of the Missouri extended ten days.

George H. Torney, major and surgeon, U. S. A., to proceed to Little Rock, Ark., to confer with the U. S. attorney for the Eastern District of Arkansas on business pertaining to the Hot Springs reservation and on the completion of this business to return to his proper station, the Army and Navy General Hospital, Hot Springs, Ark.

William J. Wakeman, major and surgeon, U. S. A., former orders amended so as to direct him to proceed to Fort Thomas, Ky., to relieve Major William W. Gray, surgeon, U. S. A.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending August 30:

P. A. Surgeon W. H. Bell, detached from the *Chesapeake*, and ordered to duty as a member and recorder of a Board of Medical Officers, Naval Academy, Annapolis, Md., and thence home and to wait orders.

P. A. Surgeon F. L. Benton, part of order of May 27, detaching from *Columbia*, revoked.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 30, 1902:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 10-17, 8 cases.
Colorado: Denver, Aug. 8-16, 1 case.
Illinois: Chicago, Aug. 16-23, 4 cases.
Indiana: Indianapolis, Aug. 16-23, 3 cases.
Louisiana: Shreveport, Aug. 16-23, 3 cases.
Massachusetts: Aug. 16-23, Boston, 8 cases, 3 deaths; Cambridge, 1 death; Lawrence, 2 cases.
Missouri: St. Joseph, Aug. 16-23, 16 cases; St. Louis, Aug. 17-24, 1 case.
Nebraska: Omaha, Aug. 16-23, 4 cases.
New Hampshire: Manchester, Aug. 16-23, 1 case.
New Jersey: Camden, Aug 16-23, 3 cases; Jersey City, Aug. 17-24, 1 case; Newark, Aug. 16-23, 6 cases; Passaic, July 26-Aug. 23, 2 cases.
New York: Buffalo, Aug. 16-18, 4 cases; New York, Aug. 18-25, 5 cases, 1 death.
Ohio: Cleveland, Aug. 16-23, 50 cases, 8 deaths.
Pennsylvania: Aug. 16-23, Allegheny, 2 cases; Altoona, 1 case; Erie, 6 cases; Johnstown, 4 cases; McKeesport, 3 cases; Philadelphia, 3 cases; Pittsburg, 9 cases, 1 death.
South Dakota: Sioux Falls, Aug. 16-23, 1 case.
Utah: Salt Lake City, Aug. 16-23, 1 case.
Wisconsin: Milwaukee, Aug. 19-26, 1 case.

SMALLPOX—FOREIGN.

Canada: Quebec, July 26-Aug. 16, 3 cases.
Great Britain: Dublin, Aug. 2-9, 1 case; Glasgow, Aug. 8-15, 1 case; Leith, Aug. 2-9, 1 case; London, Aug. 2-9, 21 cases, 4 deaths.
India: Bombay, July 22-29, 8 deaths; Calcutta, July 19-26, 1 death; Karachi, July 20-27, 1 case, 1 death.
Russia: Odessa, Aug. 2-9, 4 cases.

YELLOW FEVER.

Brazil: Amazon Valley, July 24, raging.
Colombia: Panama, Aug. 11-18, 3 cases, 1 death.
Dutch Guiana: Paramaribo, July 1-30, 1 case, 1 death.
Mexico: Coatzacoalcos, Aug. 8-16, 9 cases, 2 deaths; Vera Cruz, Aug. 8-23, 39 cases, 17 deaths.

PLAGUE.

Egypt: Alexandria, April 14-Aug. 6, 70 cases, 35 deaths; Tukh District, May 2-Aug. 6, 39 cases, 21 deaths.
India: Bombay, July 22-29, 28 deaths; Calcutta, July 19-26, 12 deaths; Karachi, July 20-27, 20 cases, 15 deaths.
Russia: Odessa, July 26, officially announced.

CHOLERA.

China: Niuschwang, July 5-12, 98 cases, 81 deaths; Tientsin, June 30-July 14, 190 cases, 110 deaths.
Egypt: General, July 15-Aug. 6, 981 cases, 819 deaths; Alexandria, to Aug. 6, 5 cases, 4 deaths; Assiout District, including Moucha, July 5-Aug. 6, 459 cases, 372 deaths; Cairo, July 22-Aug. 6, 464 cases, 404 deaths.
India: Bombay, July 22-29, 4 deaths; Calcutta, July 19-26, 34 deaths; Karachi, July 20-27, 25 cases, 24 deaths.
Japan: Fukuoka Ken, to July 28, 287 cases, 168 deaths; Hiogo Ken, July 29, present; Kanagawa Ken, July 29, 1 case; Kumamoto, July 29, present; Nagasaki, July 29, present; Saga Ken, July 29, present; Tokyo Fu, July 29, 3 cases.